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ORIGINAL ARTICLES

THE MANAGEMENT OF THE MORE COMMON FRACTURES*

BY ARTHUR W. ALLEN, M.D., F.A.C.S.

THE subject of fractures in general is too large to attempt a comprehensive discussion in one evening, but, rather than go into detail on a small section of this interesting problem, I will rapidly present to you some generalities and a few details of the treatment of these cases now employed by the Fracture Service of the Massachusetts General Hospital. This Service was organized several years ago by Dr. C. L. Scudder, who realized that this branch of general surgery should be handled by men especially interested in the subject. This we believe has met with approval throughout the country and has resulted in considerable standardization of treatment in many types of fractures.

The wealth of material collected in larger centers during the World War gave a great opportunity to advance the treatment of fractures in general and compound fractures in particular. More was accomplished in a few years than could have been possible in many decades of peace. Splinting, skelatal traction, early motion of joints, debridement and Carrel-Dakin's solution have in a way revolutionized the entire management of fractures. Shortening, deformity, stiff joints, poor function and amputation are now avoided in the majority of cases. This has been brought about largely by unusual interest in these cases by a minority of surgeons.

The use of skelatal traction, the Steinman pin and the ice tongs have made it possible to overcome muscle contraction and maintain the normal length of the limb during the process of union, seldom possible by the older methods of adhesive traction. The metal instruments placed in or through the bone have resulted in no damage to the bones, although mild soft part sepsis nearly always takes place. The method is not painful to the patient and gives perfect control of the fragments. Without these methods the management of many over-riding, oblique and spiral fractures would give unsatisfactory results and compound fractures necessitating Carrel-Dakin could not be successfully handled. Many cases formerly requiring bone plates or bands are now satisfactorily treated by skeletal traction.

Open reduction is still necessary in a small percentage of cases; plates and bands are occasionally used. Frequently the fragments are pried into alignment, the intervening soft parts having been removed the bones are easily held by a simple apparatus of skin traction or plaster. Fascia lata has recently replaced such material as silver and bronze wire and Kangaroo tendon to a large extent. This method devised, or popularized, by Gallie is one of the greatest advances in the modern treatment of fractures especially of the patella and the olecranon. Bone grafts, especially of the osteo periosteal type, offer the greatest help we have in the treatment of non or delayed union.

Long immobilization of simple fractures is the greatest flaw in the methods commonly employed today; anatomical reposition of a broken bone is ideal; a good reduction desirable, but prolonged, splinting of the neighboring joints often result in long or permanent disfunction. This should be avoided in every conceivable way. If the joint must be immobilized it should be done in the position of greatest function, such as abduction in the shoulder and flexion in the elbow. The distressing results often obtained by the oversight of these details have led some authorities on the subject to recommend the "birds of the air and the beasts of field" methods of treatment. Certainly too much stress has been laid on the anatomical result and function not considered until it is too late. This has been strongly enforced upon our attention by end-result studies. When one attempts to change the position of the fragments in a Colles Fracture a week old the absurdity of more than a few days immobilization in these cases becomes strikingly apparent. The average doctor will remove the cast and allow the whole of the body weight to come on the ankle joint in a Pott's fracture almost as quickly as he will remove the tight wooden splints in a Colles. Harm seldom comes from this early use, so why the long period of restriction in the cases that would be benefited by early active motion where no strain is placed upon the fracture line.

The functional result is so important and so thoroughly disregarded by the large majority, that over-emphasis in this point cannot be

*Read before the Haverhill Medical Club, January 7, 1926.

made. The first consideration in every case of broken bones should be in regard to this particular individual's field of industry. This is most serious in the middle aged or elderly individual who has spent his life doing one kind of work. A carpenter who has broken the upper end of his humerus and has been treated with his arm to his side may get solid union in good position but a shoulder so stiff and painful from bursitis etc. as to make his work impossible for the rest of his life. He either becomes a night watchman, a gate tender or a dependent on his meagre compensation. The danger lies in that the individual can still walk around, therefore, he is not hospitalized and he considers himself fortunate for this reason. It is weeks later when he is told or decides for himself that "rheumatism" has set in and function is painfully slow in returning that he realizes the seriousness of his injury. The average result of a fracture of this type would be better if the individual never consulted a physician but persisted in his home remedies of skunk's oil and bread poultices with a daily increase in the range of motion as he tries it out to the limit of pain. This has been borne out by treating a series of such cases by immediate active motion, swinging exercises and no restricting apparatus beyond a sling for a short time. None of us enjoy pain and it is difficult to get an individual to hurt himself. If he is assisted at first to move his joint, a little confidence is soon established and as the swelling recedes the range of painless active motion increases, gradually returning to normal. A shoulder joint without the power of abduction is one of the most incapacitating sequellae that can follow an injury. Spare no pains to avoid it.

PHYSIOTHERAPY

This has come to be a byword in the convalescence of fracture cases. On the whole a beneficial procedure but too often relied upon to the exclusion of the far more important active use and motion. We have often seen patients, referred to physiotherapy, report for a half hour treatment of baking and massage three times a week taking care to do nothing themselves between treatments. I am sure that if the entire physiotherapy department consisted wholly of an instructor in active exercises to teach these patients how to strengthen their muscles and limber up their joints and safely use their recently broken bones themselves that more benefit would be derived than from the present methods. Heat, massage, diathermy and electricity are important adjuncts in treating these cases, but active motion liberally and frequently indulged in by the patient himself is far more important. Too much emphasis cannot be laid upon this side of the question, as it has been so universally disregarded. Passive motion is harmful if carried beyond the range of active motion. The patient may need assistance to learn or even accomplish his complete range of active motion at first, but should not forcibly be carried beyond his limit. Pain is the indicator and any treatment that is painful should be discontinued. If this is disregarded the reaction about the abused tissue is so great that he spends a sleepless night and finds he has less motion the next day. He may have recovered sufficiently by one complete day of rest that he is back at the starting point when his next treatment is due. How much better it is to stay within the limits of pain and let the progression to restoration of function come slowly, naturally and largely by the individual's own efforts.

A brief resumé of the treatment of the more common types of fractures will now be considered.

THE CLAVICLE

This injury, so common in childhood and in the young, giving satisfactory results by all the methods in use might lead one to feel that it is hardly worthy of special mention. The injury is common, however, in adults and frequently results in a long period of disability, usually from a secondary subacromion bursitis, resulting from faulty treatment. I have seen two cases in laboring men in the early forties who have not been able to work for over a year following this simple fracture. The old Velpeau dressing with adhesive plaster, pulling this way and that, should be permanently discarded in adults, it is not often necessary in children, but is not especially harmful as the young, plastic joints and bursae are not damaged by the position it maintains. The clavicular cross was the first advance in the treatment of these injuries and has given excellent results and is a fairly comfortable dressing. It holds both shoulders back and allows the fractured ends of the clavicle to fall into alignment; the arms are free and the shoulder joint does not become stiff and painful. It has the disadvantage, however, of needing adjustment frequently and in being bulky under the clothing. A better dressing is found in a plaster of Paris, figure of eight, around both shoulders crossing in the back. In some cases it may be necessary to wait for 48 hours for the muscle spasm to cease before applying this dressing. The patient is placed sitting on a stool, erect, with shoulders well back, the arms abducted to an angle of 45 degrees and the elbows acutely flexed. No anesthetic is needed. After the proper position has been obtained by slow, careful movements on the part of the patient a light felt pad, four inches wide and eight inches long, is placed under each axilla, this is held by four turns of a six inch sheet wadding roller started from behind and crossed in the back between the shoulder blades. Two, four inch, five yard plaster of Paris bandages are then applied over the

sheet wadding, no attempt being made to cover the fractured portion of the clavicle, as the apparatus is simply meant to hold the shoulders back in a soldierly position. While the plaster is still wet the arms are then placed close to the chest wall and the plaster under the axillae molded so there will be as little interference with adduction as possible. The patient can put on his regular clothing; move his arms freely; is immediately comfortable and can go about at once; if his work is not laborious he can carry on almost immediately. These patients do have some trouble finding a comfortable sleeping position for a few nights. By a proper adjustment of pillows or allowing them to sleep on their face this fault is overcome. Usually union is complete in three weeks and the apparatus can be removed. This dressing has also worked admirably in the treatment of dislocations of the outer end of the clavicle. Small children are just as well off with a flannel bandage figure of eight as with plaster. Bandage, however, will not hold an adult.

THE SCAPULA

This bone, fortunately is not often broken but it does occur in certain types of injuries. The methods of using the arm as a lever and a large axillary pad as a fulcrum will have a tendency to reduce the fragments. The result will often be disappointing by this method, however, as we have the shoulder joint and bursa getting tied down in adduction. To avoid this, abduction and adhesive plaster traction in a Thomas splint or Blake suspension has replaced the other method. This requires hospitalization for four to six weeks but the earlier return to function has made it worth while. These patients are apt to have a fairly long disability, as pain about the shoulder girdle, especially in the region of the anterior portion of the deltoid muscle is a persistent symptom. This is noted particularly on extreme abduction and for this reason this essential position must be maintained during the early treatment.

THE HUMERUS

Surgical neck: This fracture forms one of the largest groups seen at the hospital. It occurs in all ages and comparatively slight trauma. The end result studies in these cases have allowed certain definite conclusions. In children the method of treatment is unimportant so long as immobilization is not maintained for too many weeks, three should be the upper limit. In adults the arm should never be immobilized to the side for more than a week and better still not at all, as the power of abduction will rapidly be lost. Abduction with traction on the upper arm by means of a Thomas or areoplane splint, or in Blake suspension should be used for the first two weeks. The exception to this rule is the fracture without much displacement and the definitely impacted one. These can be treated with active motion from the beginning. With the body bent forward at the waist the arms are swung to and fro and in a circular motion, rotation must also be carried out by alternating pronation and suppination of the forearm with the elbow extended. A weight held in the hand, such as a five pound flat iron for a few minutes at first and increased to many series, of fifteen minutes each, during the day. Cases treated by this method from the start or by abduction and traction for a short time at first followed by active motion give a functional result in an average of fourteen weeks from the time of injury. A series of cases treated by the arm to the side methods had an average disability of twenty-two weeks. The saving of time may seem inadequate for the trouble and expense of hospitalization, but certainly there can be no argument against the method of immediate active motion. Besides, these figures are based on an average of all ages and the middle aged working man will show a longer period of disability between the two principles of treatment than the above figures indicate.

Complete fractures of the surgical neck with over-riding must be openly reduced. The loose and dislocated head may occasionally have to be removed. These cases are rare, however, and seldom necessary. Manipulation in cases of considerable displacement may be desirable. The position can be improved, early, especially under the fluoroscope.

Shaft: Here the Jones humerus extension splint is advantageous. Frequently enough, however, there is no overriding of fragments and the older method of coaptation splints, sling and circular give better results. The lower end of the humerus offers as a rule more difficulties, traction here often saves an open operation.

Supracondylar fractures in children are common and are difficult to handle. By over extension of the elbow the fragments can usually be reduced. Repeated attempts are often necessary. The fluoroscope has been a great help in the reduction of these fractures. The elbow should be put up in acute flexion, extreme care being taken to avoid shutting off the blood supply to the forearm.

Condylar fractures into the joint offer a difficult problem in nearly every case; open operation is often necessary holding the fragments by screws or pegs, and even the removal of the entire condylar region has been advocated. None of these methods are perfect. The result in adults nearly always show elbows of limited motion, although many are functionally good.

RADIUS AND ULNA

These bones will be considered together as they so frequently are injured at the same time.

Head of radius: This fracture, a fairly com-

mon one has not been thoroughly mastered in the minds of most men. We have seen surprisingly good results from early motion, in some of these cases where there has been little displacement, so that now unless there is gross comminution or gross displacement the patient is given a trial, usually limited to six or eight weeks, to see how much function he may regain. If progress is not satisfactory, operation is performed and either the loose fragments alone or the entire head and neck removed. Excellent results have been obtained in some cases of removal of the head and neck, especially where there is no complicating injury to the ulna or humerus. These cases, as well as the condylar fracture into the joint, are prone to give a majority of elbows with impaired motion.

Olecranon: This fracture uncomplicated, usually does well with the arm held in extension. If the fragments do not approximate in this position open operation should be done. The capsule alone may be sutured, but by drilling the fragments and fixing them with a roll of fascia lata early motion and earlier function will result.

Both bones in the upper third can be beautifully reduced by traction on the hand with the elbow flexed to a right angle, an ordinary cotton glove can be glued to the hand and traction thus obtained. Better control of the fragments can be had if the patient is kept in bed on his back the upper arm being held to the mattress, and the traction applied overhead. It is well to leave the fingers free and insist on active motion of the digits, as cases treated by traction, including the fingers, were prone to be handicapped by stubbornly stiff metacarpo-phalangeal joints.

Both bones, middle and lower thirds, with overriding can seldom be reduced by closed methods. Usually open operation is necessary and the ends of the bones pried or skidded into position. Bone plates should be avoided if possible even if the bones have to be reduced separately at intervals of two or three weeks. With the patient on the face and the arm out-stretched both bones can be operated upon without moving the forearm and in this way by careful manipulation a retaining plaster can be applied without having one or both of the bones override again during the process.

Colles Fracture is the one bony injury that every practitioner feels competent to handle. The results are usually good, many could be improved and disabilities shortened. One of the most common mistakes on the part of physicians today is the attempt to reduce these fractures without an anesthetic. Every case worthy of reduction should have anesthesia, the fracture should be loosened and the lower fragment which is pointing towards the dorsum of the wrist pushed forward so the joint line between the lower end of the radius and the carpus is in its normal relationship. After this is done, loose wooden or plaster splints can be applied. X-rays should be taken after reduction and if the result is still unsatisfactory, try again. I am sorry to say that it is necessary for many of the Colles fractures coming to our clinic to have two or more attempts at reduction before the position of the fragments will be approved by the Service. In cases that are difficult to hold in alignment with straight splints, the position of extreme palmar flexion of the wrist is useful. Do not leave the splints in place too long, many can be removed in eight to ten days. Fourteen days should be the upper limits of immobilization.

THE CARPUS

Fractures and dislocations of the carpal bones are so often overlooked and are so serious that I wish particularly to mention them. I have seen several of these cases that even after X-ray examination went unrecognized for several weeks, receiving treatment for sprained wrists. The fault lies in the habit of Roentgenologists taking only the anterior and posterior and lateral views. Whenever a carpal bone injury is suspected or the X-rays fail to show adequate reason for the symptoms, stereoscopic plates of the wrist should be made, frequently carpal bone fractures can be demonstrated in this manner that cannot be seen in the ordinary plates. The scaphoid is most frequently fractured. The semilunar most frequently dislocated. The other bones are rarely injured. Fracture of the scaphoid without displacement needs only a long period of immobilization in a cock-up splint. In six or eight weeks this can be replaced by a cock-up splint made of leather and steel that will allow motion of the fingers. Heavy work can be accomplished in this apparatus which should be used at work for a period of from six to twelve months. Union may not always take place, but the wrist finally gets strong enough to go without support. If there is displacement of the fragments, operation is necessary, removing usually only the smaller fragment, splint, as above, should follow operation. The semilunar is usually dislocated anteriorly and if recognized early can be reduced under the fluoroscope. The wrist being hyperextended; pressure is applied over the dislocated bone on the anterior surface, and as the wrist is flexed towards the palm the bone pops into place. The long periods of disability seen in these cases is appalling and expectant treatment will result disastrously.

THE FEMUR

Intra-capsular: These fractures occurring so frequently in the aged have always been a problem. For several years by using the Whitman method of plaster fixation, in extension, abduction and internal rotation we believed our

results were excellent until our end result studies showed us otherwise. About 25% of these cases die in the hospital, over half of those surviving obtained bony union, many others have useful hips and have been able to walk without aid after twelve to eighteen months, some of them, however, have not been able to get about without the aid of splint or crutches. All or nearly all have short legs and those who walk, limp and are limited in their activities. Many suggestions are being offered to better this situation. Certainly, as yet, nothing better than the Whitman method has been found for the average case. It is comfortable; the patient can be lifted out of bed immediately, preventing pneumonia in the majority; external rotation does not recur and some of them get into condition for operative reconstruction.

Intra-trochanteric and low fracture of the neck are more encouraging. They are often included in some of the reports on intra-capsular fracture, but should not be confused with them. Union always takes place in the intra-trochanteric cases and skin traction in abduction for eight to ten weeks suffices to make them ambulatory again. A Thomas walking caliper splint will hasten weight bearing with safety. Good functional results are usually obtained.

Shaft: Here skeletal traction plays an important role. In many femurs, there is overriding of fragments at the onset and to overcome the powerful muscles of the thigh without direct action on the bone itself is extremely difficult and well nigh impossible. Skin traction with adhesive plaster, i. e., the old Buck's extension rarely serves to more than prevent further overriding, at best. By applying ice tongs to the supracondylar region the bone can be pulled down to the desired length and easily held there until union begins. Femurs treated by this method should not be short, there is a little danger in getting them too long. Frequent X-rays to follow the movement of the lower fragment is necessary for satisfactory reduction. This method aside from the perfect control of the fragments makes it impossible for early knee motion. This alone is worthwhile as one of the chief causes of long disability in fractures of the femur is stiffness in the knee joint. This is largely due to the tying down of the quadriceps femoris and early massage of this region, with motion of the knee joint, will materially shorten disability. Weight bearing protected by a walking caliper splint should be as early as consistent with union, usually safe in ten to fourteen weeks. In some transverse fractures that will not come into line by traction, due to interposing soft tissue, open reduction will be necessary. Plates, bands and bone grafts may be rarely indicated. Frequently the fragments will dovetail and can be held in plaster or skin traction without the aid of internal fixation. If metal is used, especially a band, it is usually better to remove the foreign body as soon as its purpose has been accomplished. Femurs in young children can be satisfactorily treated in overhead adhesive plaster traction and the result is almost universally good even if overriding has not been corrected. Reports are now appearing to show that the leg on the broken side in young children is often longer than the normal one at the end of a year.

THE PATELLA

Here open operation is nearly always necessary as no satisfactory method of closed reduction has been devised, besides the lateral extension of the capsule is usually torn and this should be sutured. Suturing of the capsule and lateral extension tears with chromic cat gut gives a good result. This, however, requires a long period of immobilization, eight to twelve weeks, which too often gives a very stiff knee, occasionally flexion is never regained in these cases and frequently sufficient flexion to allow comfortable use, is long in coming, six or eighteen months. Hawley's method of using wire to hold the fragments allows immediate motion, the wire being removed at a later period. Fascia lata, an inch wide and six inches long, can be rolled into a suture and threaded through an oblique drill hole in either fragment, tightened, fanned out and sutured to itself and to the capsular tissue of the upper and lower fragment, the lateral rents closed with cat gut and active motion started in forty-eight hours with excellent results. A sheet of fascia can be sutured to the quadriceps above and the patella ligament below, reenforcing the original sutures and eliminating some of the strain that comes upon them.

THE TIBIA AND FIBULA

Fractures into the knee joint: This must be considered a moment as by bitter experience we have learned that these fractures of the upper end of the tibiae with a line of fracture running up between the tuberosities into the joint are slow to unite solidly enough to allow weight bearing. The fragments may not be displaced and union may seem solid; weight bearing begun and pain gradually increased. A late X-ray will reveal one tuberosity has been pushed down allowing lateral deformity of the knee joint. This throws the leg out of alignment and the result is pain on weight bearing for the remainder of the victim's life. These fractures should be protected by a caliper splint for six months from time of injury.

Both Bones: Many of these cases can be reduced at once and placed in a plaster cast. Care must be taken that in the oblique and spiral fractures that the original deformity or worse does not occur as the leg shrinks inside the cast and muscle contraction takes place. We follow

these cases at 10 day intervals for 30 days by X-ray examination. Often we find our original reduction lost and then resort to skeletal traction. A steel pin through the os calcis gives perfect control of these fragments and overriding or displacement cannot occur if alignment and the proper amount of weight is watched. In every case of fracture of the tibia with appreciable overriding a fracture of the fibula will also be found, often times many inches away from the fracture of the tibia. A common type is a fracture in the lower third of the tibia and in the upper end of the fibula. X-rays of these bones should always include the entire shaft.

Potts: Still we see many unreduced fractures about the ankle joint. Too much stress cannot be laid on getting good relaxation in these cases under an anesthetic and careful attention to position of the foot and ankle joint. Dorsi-flexion and inversion of the foot must be obtained or the disability is long and the result disastrous. These cases seldom need to rest in pillow and sides until the swelling goes down. Reduction and well padded plaster from toes to tibial tubercle as soon as possible after the injury will give the best results. The patient should be kept in bed with foot elevated for a week thereby obviating the danger of pressure from swelling. The cast should be bivalved immediately and after the first week the top removed daily allowing active motion of the ankle joint.

The Os Calcis: Inasmuch as these cases are so common, look so innocent in the beginning and give such prolonged disabilities, they deserve special mention. The average laboring man will return to work more quickly after fracture of any long bone, adequately treated than he will after a fracture of the os calcis regardless of who takes care of him. They all have pain on lateral motion of the ankle on walking; plates, special shoes, etc., help some, but the fear of pain by the slightest tilting of the foot during weight bearing keeps them off the job. It has been demonstrated that this pain is due to the irregular arthritic surface in the articulation between the os calcis and the astragalus and by excess callus under the external malleolus and that by fusing the astragalus with the os calcis and removal of the excess callus on the outside pain is eliminated. Some of the results of these operations are most striking and with it the disability from this injury has been reduced to from four to six months instead of years as is frequently true in the unoperated cases.

COMPOUND FRACTURES

The seriousness of any compound fracture is sufficient to cause loss of sleep to the surgeon handling the case. Some are simple puncture wounds of the skin from within and can often be treated as a simple fracture. Many cases, however, are badly contaminated, tremendous damage to soft parts as well as to bone requiring a long, tedious, painstaking mechanical cleansing of the parts, called "debridement". Not only foreign material carried in from outside but separated or badily contused dead or dying tissue and loose fragments of bone without periosteal attachment should be removed. Large quantities of salt solution for mechanical reasons only should be irrigated through the tissue in every direction, counter-incision made so that Dakin tubes can be inserted in every corner where there may be a pocket. The wounds should be left entirely open and the limb supported by a splint and skeletal traction applied. By establishing Carrel-Dakin technique and adhering closely to its principles many cases will come through with a perfectly useful limb. Do not rely on chemicals to sterilize these cases. We have seen many disastrous results come from depending on iodine and small rubber tissue drains. Results by these methods will nearly always be disappointing. Either death from gas gangrene or septicemia, at best a chronic osteomyelitis, or an amputation will result. Many cases would be better off with primary amputation than with the inadequate methods so commonly employed. Permanent disabilities result from prolonged invalidism while an early amputation with much saving of pain and suffering allows a man to get back into industry before his courage is entirely gone.

In conclusion let me say that

1. Fractures should receive the serious consideration of every surgeon who takes the responsibility of handling them. The pitfalls are many and results often disappointing. The sins of commission are frequently more dangerous than those of omission.

2. Take into account from the beginning the patient's occupation and strive to restore him to the economic world. Do not get lost in the maze of treating the bone alone but treat the individual. The functional result is more important than the anatomical position.

3. Free the neighboring joints as early as possible. More disfunction comes from stiff joints than from the broken bone itself. Active motion and function are your most important physiotherapeutic measures.

Smallpox.—For the week ended May 22, 1926, 36 States reported 602 cases of smallpox. Last year for the corresponding week they reported 682 cases. Three deaths from smallpox were reported by these cities for the week this year—1 at Chicago, Ill., and 2 at Los Angeles, Calif. —*P. H. Reports.*

HEALTH ADVICE: WHAT DOES THE PUBLIC WANT AND NEED?

BY DONALD B. ARMSTRONG, M.D., SC.D.

"Is certified milk fattening? I would like to fatten my husband, and at present he weighs only ninety-eight pounds soaking wet!"

Thus the tedium of reading hundreds of requests for health advice is occasionally relieved by a dash of humor. We have never conducted a health column, or a health correspondence course, though we have viewed with interest the popular health press columns as they are presented in the daily news. On the other hand, a coöperative insurance association, with twenty-four millions of members to whom it offers a health service, receives a large volume of communications seeking information and guidance along health lines—an experience which offers a rich field in which to study the information needs and desires of variously circumstanced individuals.

One might almost assume that there was no "public" in the sense of a well determined public mind with reference to health and medical procedure. One gathers an impression that there is little uniformity or standardization, and almost as many views with reference to sound and unsound medical procedure as there are individual correspondents. At least, this is one impression, although it may be erroneously based upon the fact that correspondence of this type is perhaps more apt to be initiated by the grossly ill-informed, the cranks, and the biased enthusiasts. Another impression that one gathers from such correspondence is that the great majority is seeking advice with reference to specific individual treatment. In many cases, what they want is not what they need, but in practically all instances, the need for competent, reliable guidance with reference to specific medical treatment is evident.

We ought to assume, and it would seem to be sound to do so, that the public is better informed now than it has ever been before. This results from the great development in the last decade or two of the movement for health education by Health Departments, by voluntary health agencies, in schools, in industry, and elsewhere.

Unfortunately, it also seems true that at least a certain percentage of the public is being more intensively misinformed than ever before. The anti-vaccinationists, the health faddists, the anti-vivisectionists and similar groups were probably never quite so well financed and aggressive, and quite so eager to take advantage of the augmented channels for reaching the public ear.

In spite of increased popular knowledge with reference to disease and health, it becomes, for at least a section of the public, an increasingly difficult job to make wise judgments concerning health practices and medical service. This situation suggests a question as to whether our popular health pedagogy in schools and out is technically sound. Should not the great volume of health instruction successfully immunize the mass of people against the attacks of the cults and the antis? In schools, for instance, we are still confining our efforts largely to the influencing of habitual reactions and to the teaching of health facts—appealing to habit and intellect. But we know that teaching by rote does not work in any other field. We have even discovered a better way for instructing the feeble-minded, let alone the normal child. We know in sex education that no amount of advice with reference to anatomy and physiology will suffice to meet the emotional curiosity of the child. Apparently in other phases of health education, if our instruction is to be effective, it must carry an emotional content that will make it a reality to the child, a fundamental part of his everyday emotional life, guiding his habitual reactions and unconsciously underlying his judgments as a child and adult with reference to what constitutes reliable information and practice in this field.

Health facts are taught in college. Facts about health are distributed to the public at large by the million. The dissemination of these facts is undoubtedly advantageous. Will an increased volume of health intelligence for the public at large ultimately enable the average individual thus exposed to make sound health judgments? Will we, by expanding our facilities in this quantitative way, ultimately furnish the basis for a practically universal sound value judgment as to what constitutes authentic information, and a reliable source of advice? Will something in addition have to be done to establish a confidence in scientific procedure, a reliance upon expert guidance, with the elimination of the existing popular antipathy to the expert in any field? In a practical way, how can we furnish the average man or woman with a factual background and a point of view (which involves something more than simply facts) that will enable him or her to appraise the difference in authenticity and value between a smallpox pamphlet issued by the American Association for Medical Progress, and an editorial opposing vaccination in Physical Culture, or between a scientifically trained and educated doctor of medicine, and a "doctor" of chiropractic?

It is not entirely clear how all of this is to be accomplished. It is a problem for schools, colleges, and for hygienists who are attempting to educate the general public. It has seemed, however, that an analysis of the type of correspondence referred to in the beginning might throw some light on the problem. Perhaps there is little that can immediately be done except to

continue to hammer away with an increased volume of reliable public instruction, at least until the psychologists or the psycho-analysts or the behaviorists tell us how more effectively to use our facts to create an individual attitude of mind that will lead to sound judgments on relative values.

At any rate, a study of lay correspondence seeking health information does to some extent reflect the present state of the public mind. It forces us to recognize how necessary it is to establish for the great mass of people, a reliable basis for individual choice as to how to live. It will also reflect, we think, that the more the established health and medical authorities are successful in urging people to go to their doctors for a health examination, the more they advocate universal vaccination against smallpox, the more the diphtheria immunization campaign is pushed—the more virulent and active will be the antagonistic reactions of the irreconcilable antis of one type or another.

What type of information seems to be demanded by the lay correspondents, addressed to a source of assumed reliable advice? What states of mind are reflected in these inquiries? As far as the Metropolitan Life Insurance Company is concerned, the inquiries have been stimulated by the wide use of literature, by an extensive nursing service for policyholders, by health advertisements, radio exercise classes, radio health talks, and other health educational devices. The presentation of a few typical communications may perhaps illustrate the obvious public desire for information and may illuminate to some extent, the whole problem of what is needed and how it is to be provided.

As implied in the beginning, the grotesque and the humorous are not entirely lacking. One lady writes that she is suffering from "an enlargement of the oriole in her throat." A man, after stating that he is "64 years young" and "used to ride 40 miles on wheel before breakfast" complains of photophobia, and adds "extreme sensitiveness to light: it makes me tired." Another correspondent complains that he is unable to detect odors as readily as other people, and asks "which of the exercises is best for this failing of mine." We also have a number of prescription blanks signed by physicians, ordering for patients as follows: "℞ The Metropolitan Tower Morning Exercises."

A large bulk of the correspondence has to do with fakes, advertised cures, and quack remedies. It comes from individuals who have been experimenting with these cures and who had in the majority of instances, grave doubts as to their effectiveness. Many indicate that before experimenting with the advertised remedies, they have shopped around among the legitimate medical profession with unsatisfactory results. Other communications are from faddists and enthusiasts who recommend the wide exploitation of devices or therapeutic methods discovered or at least used with supposed success by the authors. It is of course always possible that certain of these advertised remedies may have some merit, and a routine reply is therefore not universally applicable.

"Would it be an imposition to ask if you class the Revigator among the fake mechanical devices?"

"My wife and I have almost made up our minds to try an advertised cure for diabetes. Yet we are hesitating and decided that you might possibly give us what knowledge you have of the Sanborn treatment for diabetes."

"We would like to know whether you think Ovaltine is harmful or not. I have trouble in sleeping."

"I am forty pounds overweight and would like to reduce. Is there anything injurious in the Marmola tablets?"

"I would greatly appreciate your opinion by return mail on the advisability of the use of reducing soap when applied to a full bust or a fat face."

A sufferer from cancer writes: "Am I wasting valuable time in trying to purge myself through the blood?"

A supposed sufferer from anaemia asks whether there is any way to put hemoglobin in the blood "without resorting to so-called patent medicines."

This constitutes a sampling of inquiries indicating to some extent, the far reaching effect of advertised cures and the necessity for accurate information and reliable guidance. How is such information to be more widely disseminated? To whom or to what agency, preferably local agency, should the average individual expect to turn for advice along these lines. Tuberculosis cures are, of course, still on the market. One correspondent writes that he has been suffering from tuberculosis for a number of years, that he recently heard of a treatment and asks . . . . "if I decide to give it a trial, should I do so under a doctor's care?" Many are the correspondents who have discovered a sure cure for tuberculosis "tested out with a great degree of success and cures. I feel conservative in saying it will cure 80% of tubercular and consumptive cases that are not past curable stages, and is a preventive as well as cure." It is generally pointed out that life insurance companies could well afford to bring out the remedy and give it to "suffering humanity."

That controversy on animal experimentation is a fairly active issue is reflected by a considerable volume of correspondence. Following a radio talk on this subject, we were advised that the talk was anything but "a health talk" and that "vivisection is one of the awful forms of practice and one of the most needless of today." On the other hand, we are urged to give more talks on the subject because "it is appalling

how ignorant most people are of the real facts. I have had to contend with so many people lately who are opposed to experiments with animals that I am greatly in need of such a talk over the radio. They seem to prefer that human lives should be lost rather than that a few guinea pigs and dogs be sacrificed to preserve them."

Controversy is also evidently active on vaccination against smallpox and the use of antitoxins and sera of various kinds. Letters from antis are numerous. Yet occasionally we are encouraged by a communication asking for facts with reference to the value of vaccination and stating . . . . "There is an old nut in my place of business that doesn't believe in vaccination, etc., and goes around preaching her doctrine, and I would like to prove to her that she is wrong. Not being an authority myself, I have quite a time of it."

Another states—"Will you kindly send me booklets on vaccination. I have been trying to convince a man who is rabidly against vaccination and he claims there are more statistics showing vaccination has failed than there are for it."

As was stated before, probably the great majority of people are better advised about these matters than at any previous time. Yet the minority is at the same time more aggressively and thoroughly ill-advised. Those who have a beginning of sound information and a rational attitude towards sources of scientific fact, with a natural or acquired respect for scientific method, should find readily available and close at hand, full and effective information upon subjects still to a degree controversial. Should not such information be regularly provided through local medical channels? Should it be necessary for an individual in Jacksonville, Florida, or in Austin, Texas, to write in a haphazard manner to an insurance company in New York, or a medical organization in Chicago for information along these lines? The important question about health advice is not perhaps "what does the public want and need" but rather how is it to be given and by what agencies.

The types of inquiries cited above indicating in a measure the extent to which advertised remedies and quack procedures are followed, at the same time reflect a rather extensive and possibly growing discontent with and distrust for the organized orthodox medical profession. This is reflected in other inquiries from individuals who have not yet broken away from the medical fold, but who for one reason or another question the validity of medical advice and the ability of the medical profession. This is found especially in communications with reference to periodic health examinations. For many years, Health Departments and voluntary health agencies have been urging people to go to their doctors for an annual health examination. Unfortunately, the medical profession both individually and in an organized way, was slow to take up this movement. Consequently, they were not, and indeed are not yet to any great extent, equipped or mentally adjusted to give the type of service required in this field of personal hygiene and the private practice of preventive medicine. Yet people are to a greater and greater degree going to their doctors for this service. With what result?—"Some doctors don't seem to know what you are driving at when you come in and say that nothing is the matter with you but you want to be examined." Another writes—"It has been my experience when I have asked for such an examination, I only receive the examination in one local spot, and must have a number of visits, and this is not satisfactory." Another: "Where would you advise a person to go in order to get a good, efficient, general examination? Personally, I don't know of a physician in whom I have enough confidence to make a good examination." Another requests a definite outline of what an examination should cover, and adds: "I feel that the average physician's examination is entirely too superficial unless he follows an outline prescribed . . ." Hundreds of letters ask that a local physician be recommended, which it is ordinarily impracticable to do. "I wish to be thoroly examined so will you please send me the name of a doctor." "What physician or at what hospital could I get a complete physical examination, including X-Ray inspection of teeth and other parts?" "Could you kindly advise me where three members of one family may have thorough examinations and obtain correct analyses of their conditions, and recommendation on how to live to gain good health, also at what cost this may be obtained?" "Has the Life Extension Institute an office in this vicinity where physical examinations can be had?"

Then there are many inquiries based on differences of medical opinion and asking for an interpretation—another impossible situation for any agency to attempt to handle by mail. "I have been having throat trouble for a good many years. An examination institute advised having tonsils removed. I then consulted my own physician and he advised against having them removed. With such a difference in the medical mind, what is it advisable for a layman to do?"

Many correspondents go a step further and are decidedly critical of the medical profession. A few have definite remedies to offer for the situation. "Would it not be a good idea to issue certificates of fitness to doctors after a proper examination so your policyholders would be able to distinguish those fitted to doctor people? After a man has taken a state examination, he is a doctor forever, even if he is fifty years behind the times. If the bung is out what good does it do to save the dripping faucet? If the doctors are incompetent or the treatment doc-

tors use is wrong, what good is precaution on the part of the general public?"

Another writes: "Why should not doctors and dentists be required to report periodically the number of cases of each kind taken and the results of treatment, or to use some other method of publicity that would give one an opportunity to check them up?"

A medical correspondent advises radio talks or lectures to medical men. "There are technical talks for farmers, engineers, and others; why not for doctors?"

Certain implications from the foregoing data with reference to health examinations and medical service seem clear. With reference to health examinations, it is fairly evident that the popular propaganda has gotten considerably ahead of medical interest or provision for this type of service. It is also evident that there is a widespread distrust in medical proficiency and a growing public interest in some method of post-graduate medical instruction and standardization and continuous technical control. Health and medical authorities are of course by no means unaware of this situation, and to a degree, measures are being taken to meet it. The recent modification in the Medical Practice Act in New York State, requiring annual registration of physicians, is at least a step in this direction. Organized efforts by county and state medical societies for the promotion of the health examination work in medical channels, for the extension of post-graduate instruction through medical societies, will be effective ultimately in allaying the lay unrest, but the magnitude and the seriousness of the problem should be recognized, and the organized efforts in this direction should certainly be accelerated. Much can be and is being done by Health Departments and by local and state medical organizations in this field. Much more can be done in supplementing these efforts by aggressive procedures on the part of organized medical machinery on a national scale.

If the lay public in general had been educated to expect health advice from the physician and if the individual physician had been trained to a greater degree than is the case at present to give hygienic instruction and to answer intelligent inquiries from his patients with reference to the hygiene of living and with reference to specific treatment procedures, a large part of the total volume of correspondence that now comes in to national agencies of one kind or another would have been eliminated. The only answer to a considerable bulk of these inquiries is "consult your physician." "Are my decayed teeth affecting my general health?" "What diet would you suggest for me; I work indoors?" "How long should treatment for a four plus Wassermann be continued?" "Would you advise the use of insulin in my case?" These illustrations might be listed by the thousand, where the only answer is "consult your doctor or dentist." That is the only answer, and a corollary to it is the increased opportunity and responsibility of the medical profession for meeting these seekers after health with sympathy and intelligence. It involves not only increased medical service, but a growing opportunity for the practice on an individual basis of preventive medicine.

There are also a certain number of inquiries that can legitimately and wisely be referred to organized health agencies, both official and private. Many of these can be directly referred to local or state health departments. To a tuberculosis association might go such a request as: "Will you kindly send me any booklets or other literature you may have on the subject of the care, cure, and prevention of tuberculosis." An association for the prevention of heart disease might be interested in the question "Can you send me a cure for the palpitation of the heart or a leaky one?", though perhaps the individual might better be referred to a competent physician. Many are the inquiries with reference to mental conditions that mental hygiene committees can aid in handling. "Do you know if there is a book on cancer which would tell something about the development of it, and how the patient is affected?"—an inquiry for transmittal to a cancer society. There is, fortunately, established machinery for handling general inquiries of this type along many other lines, including child health, nursing, blindness prevention, social hygiene, venereal disease control, etc., where information services are well established and functioning in a helpful manner.

But there still remains a great volume of inquiries seeking general information with reference to concrete methods of treatment, the health examination, how to find a good doctor, how to secure an appropriate specialist, etc. More recently, many of these questions are concerned with specific immunological procedures, particularly on diphtheria, scarlet fever, measles and smallpox. One father writes that he has two boys who should have toxin antitoxin. However, he says that he and many of his friends ". . . . are doubtful as to the right course to pursue" and wishes to know whether we would "care to comment on the advertisement appearing in the New York ——— in which they do not hesitate in denouncing the method which you suggest." A mother wishes to know whether "vaccination helps to ward off diseases such as diabetes and does it purify the blood." "Is there any bad after-effect whatsoever with vaccinations of any kind." Is it safe to extract "serum from a person suffering from measles and inject it into another person." "Have you any information as to the prevention of measles and scarlet fever?" "What is the theory on which the practice of vaccination or the use of serums is based?"

The types of inquiries which could only be wisely and helpfully handled by local, direct, and intimate contact are to be found in the fields of mental hygiene, heart disease—"Can you suggest some special doctor who might be able to put me on my feet again"; gastro-intestinal conditions—"I would appreciate it very much if you would tell me of a good diagnostician as I suffer greatly from indigestion"; orthopedics—"I have suffered with foot troubles for eleven years. Can you recommend an orthopedist to me?"; dermatology—". . . . sores on my arms and body. Can you do anything for me either by sending or recommending a doctor?"; ophthalmology—"I wonder if you would please give me the name of an eye doctor"; roentgenology—"Would be very grateful if you could supply me with the address of a reliable X-Ray house. We are working people and cannot afford to take chances with the quacks"; glandular therapy—"Can you recommend a good doctor for simple goiter—one whose charges are reasonable." Finally, we have a letter from a man who suffers from nose and throat trouble, hay fever, asthma, etc. He has exhausted his finances trying first one thing then another without relief. He states that first he had his nose burnt. After trying this for a long time he ". . . got disgusted and gave up the doctor after helping financially to build his home." The next doctor used a snare to take out a growth in his nose. The next doctor sawed off a piece of the bone in his nose. He then says he used all the "smokes" he could hear of, and has been inoculated for hay fever and asthma "to beat the band." He is now using a spray recommended by another doctor. He asks to be advised: "I am now 73 years old and am not able to spend any money. I have about exhausted my resources. Thanking you in advance, etc."

Judging by the correspondence, experiences of this kind are by no means uncommon. It represents a type of chaotic, unintelligent, irresponsible, medical handling that must do a great deal of harm to the standing of the profession in general. It is, however, more or less aside from the main point, namely, the need for direct and localized informational service.

As we have indicated, this service somehow or other must be directly supplied if a limit is to be placed on the tendency to shop around among doctors, if we are to inhibit the growing discontent and disillusionment with reference to the medical profession, and if we are to protect those who are ill from falling into the hands of medical advertising agencies, quacks, etc. A very large volume of the thousands of inquiries that must be written every day to central sources of information is entirely futile. It is impossible to answer the questions or to give helpful advice except to urge "seeing your doctor." Names of physicians cannot be suggested except under very unusual circumstances. Yet the average person, unacquainted with medical personnel in his community, needs just this type of advice from responsible and reliable sources. Whose job is it? The Health Department's? County Medical Society? A local voluntary health organization that might establish a clearing house of this type? Of course, as responsible pay clinic services or labor and industrial workers' clinics develop, the need for judgment on the part of the individual in selecting medical service will be decreased. But how far will or should pay clinical service be developed? There is one certainty, and that is that they are likely to develop quite rapidly, and perhaps much more rapidly than the medical profession would welcome unless that profession, or some of its allies, devise machinery for guiding individuals into safe channels of medical service.

Every community of any size should have a recognized and advertised medical information bureau to which individuals may turn with a feeling of confidence for information with reference to health and hygienic practices, for impartial, unprejudiced, and financially disinterested advice on medical treatment, for suggestions with reference to health examination procedure, for guidance as to clinic service, and for protection against fraud and deceit in quack medical methods. To some extent local health centers, clinics, dispensaries, hospitals, and pay clinics are meeting this situation. But judging from the volume and type of correspondence analyzed above, the facilities are by no means adequate, nor are they widely known and accepted.

More concrete efforts are needed to encourage competency on the part of the medical profession, and public confidence in its proficiency. Post-graduate educational measures, medical extension courses, definite controlling legislative procedures—all such steps need wider application. It is particularly important to encourage the doctor to meet the growing demand for personal hygienic advice, for health examination service, and for his full participation in the private practice of preventive medicine. This medical educational work is an obligation which rests primarily upon medical schools, medical societies, and similar professional organizations. It also seems probable, however, that these same medical organizations, perhaps particularly the local county societies, should, in coöperation with health departments, play a bigger part than they have hitherto recognized or accepted, in the field of guiding and informing the public.

As we implied in the beginning, any or all of such an informational program designed both for the lay public and for the medical profession, in part with the object of effecting a closer and more satisfactory relationship between them, may not meet the fundamental problem of establishing an attitude of mind on the part of the individual that will enable him to judge

wisely and soundly as to what constitutes scientific medical and health information and what represents reliable and authoritative professional service. That job, however, is perhaps after all up to the professional educators—in schools, in colleges, and among the public at large. At any rate, they will have to give us the technique before we can perhaps make the most of our budget of facts. In the mean time, we have a problem of devising the best possible machinery for the dissemination of those facts and for their capitalization to the best advantage of the people. Whatever may be the future contributions to educational technique, it is likely that a satisfactory and effective machinery for the distribution of knowledge and for the bringing to bear, upon individual health and disease problems, the best available technical knowledge and skill, will constitute perpetually, a fundamental necessity. Consequently, even with our present limitations, nothing is to be lost, but probably a great deal to be gained by endeavoring effectively and intelligently to meet the existing situation.

SOME NOTES ON THE TREATMENT OF THE INSANE*

BY HENRY R. VIETS, M.D.

In the eighteenth century the treatment of the insane had reached its lowest depths. Dr. Courtney has given us a striking picture of conditions at the Salpêtrière at our recent Charcot Centenary Meeting[1]. He mentions the chained cases in their unspeakably unsanitary surroundings and the inhuman treatment given them. Many of these same conditions prevailed elsewhere. Tenon[2] described general hospitals in Paris where four to five patients occupied a single bed and eight hundred were crowded on pallets in the halls. Most of these patients, of course, were not insane, but whatever Tenon described in the general hospitals existed in an even greater degree in the so-called "hospitals" for the insane. Early in the next century Richard Bright visited the "Lunatics' Tower" in Vienna and gave us a striking picture of the "show place," where the public were allowed to view the insane, like animals in a menagerie, on payment of a small fee[3]. We have good descriptions, also, of similar conditions existing in Germany, Russia and England.

Drug treatment was extensively used. Garrison[4] gives the following summary: "Melancholia was treated by opium pills, excited states by camphor, pruritus by diaphoresis, and a mysterious power was ascribed to belladonna: if it failed, everything failed. Other remedies were a mixture of honey and vinegar, a decoction of 'Quadenwurzel,' large doses of lukewarm water, or, if this failed, 'that panacea of psychiatry, tartarus tartarisatus.' The costly aqua benedicta Rolandi, with three stout ruffians to administer it, a mustard plaster on the head, venesection at the forehead and both thumbs, clysters, and plasters of Spanish fly, were other resources. Barbarities were kept in the background, but the harsh methods of medieval times were none the less prevalent. A melancholic woman was treated with a volley of oaths and a douche in cold water as she lay in bed. If purgatives and emetics failed with violent patients, they came in for many hard knocks, with a regime of bolts and chains to inspire fear. A sensitive, self-conscious patient was confined in a cold, damp, gloomy, mephitic cell, fed on perpetual hard bread, and otherwise treated as a criminal."

Changes in these frightful conditions were largely due to the efforts of two men, Pinel and Tuke. The latter made the first attempt in York, England, when he founded the Quaker retreat, later known as the York Retreat, in 1792.

The early history of William Tuke's work is well described in a book by his great-grandson, Dr. D. Hack Tuke, issued at the time of the centenary celebration of the York Retreat[5]. William Tuke must have been thoroughly familiar with the deplorable state of the insane in England in the latter quarter of the eighteenth century. It was common knowledge, although apparently not fully realized by the people in general, that both the Prime Minister, Lord Chatham (William Pitt) and George the Third were sufferers with marked mental symptoms. The King received in the hands of his physicians the same treatment as did the wretched patients at the Bethlem Hospital. He was "not only mechanically restrained by the doctor's orders, but was brutally knocked down by his keeper." We may gain some idea of conditions at Bedlam from the very realistic statues of "Melancholy" and "Raving Madness" by Caius Cibber, father of the famous dramatist, Colley Cibber, now at the Guildhall Museum, London[6]. Pope calls them "great Cibber's brazen brainless brothers," although they did not, of course, represent Cibber's brothers. John Howard, also, in his tours to various parts of the world, investigating prisons, found many insane in gaols.

All these specific instances must have affected the gentle Quaker in York. In addition, the world was at war. France, England and America were in a state of turmoil. The guillotine had been invented and royal heads, as well as many others, were being lopped off.

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Washington, viewing Europe with clear, distant vision, exclaimed in one of his most forceful letters: "How pitiful in the eye of reason and religion is that false ambition which desolates the world with fire and sword for the purpose of conquest and fame, when compared with the minor virtues of making our neighbors and our fellow-men as happy as their frail condition and perishable natures will permit them to be." To Tuke that "minor virtue" became a major one. The inspiration was not very different from that which guided the late Doctor Fernald of Waverley, whose whole life was devoted to making his "fellow-men as happy as their frail condition and perishable natures permitted them to be."

The immediate cause of the founding of the York Retreat was the treatment given to patients at the York Asylum, established in 1777 and operating in 1792 along lines similar to institutions elsewhere. A specific case came to light where neglect and possible cruelty were suggested and William Tuke, a philanthropic citizen of York, brought forward a proposition that the Society of Friends establish a hospital of their own for the care of the insane. Tuke found much opposition to his scheme, but was not easily disheartened. He visited asylums elsewhere, especially St. Luke's Hospital in London, where he found patients in a miserable state, crowded, chained, naked and filthy. He came back to York with renewed enthusiasm for his cause and with the aid of his son, Henry, and the American, Lindley Murray, the Retreat was instituted. Murray, a most remarkable man, partially paralyzed through an accident and confined to a wheel-chair, is well remembered for his Grammar of the English Language (1795). A local physician, Thomas Fowler, whose name has come down to us through "Fowler's Solution," but of whom we know practically nothing, was the first visiting physician to the new hospital. The hospital prospered. There was soon an insistent demand by families for the admission of patients then in other institutions. The House of Commons called Tuke to give evidence about his new system of treatment. The hospital soon attracted the attention of foreigners. A Swiss physician, de la Rive, wrote an account of his visit in 1794.

It is interesting to note that the old York Asylum, where the abusive treatment of patients made such a marked impression on William Tuke, continued to go from bad to worse and was not reorganized until 1814. In the meantime, Samuel Tuke, grandson of the founder of the Quaker Retreat, had written the Description of the Retreat (1813).

Pinel did not become aware of what was happening at York until 1798, although he had been working along similar lines for a number of years. His *Traité* ***médico-philosophique sur*** *l'aliénation mentale* was not published until 1801. Reil's "Rhapsodies" appeared in 1803 and he founded the first journal of psychiatry in 1805-6. Samuel Tuke's *Description* was translated into German in 1822 by Jacobi. When the Bloomingdale Hospital in this country was planned, someone wrote to Lindley Murray, who handed the letter over to Samuel Tuke. Tuke's reply in manuscript (1811) form has recently come to light, a 16-page letter of advice, which materially aided the planning of the institution at White Plains[7]. It was Tuke's book also that influenced John Conolly to make such radical changes when he became Superintendent of Hanwell Asylum. Conolly's first book appeared in 1830, but it was not until 1856 that his more famous work on the *Treatment of the Insane without Mechanical Restraints* was published, a book which had a profound effect on the treatment of the insane throughout the civilized world.

It will thus be seen that by the pioneer efforts of this kindly Quaker gentleman of York, William Tuke, a revolution in the treatment of the insane was started which echoed to the far corners of the world. In this country, it led directly to the creation of our great state hospital system. His work stimulated a long line of workers, Jacobi in Germany, Conolly in England, Isaac Ray in America, and many others, and every worker in every hospital for mental disease in this country carries today some of the imprint of William Tuke's forceful character.

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DIETETIC TREATMENT OF EPILEPTICS

BY L. PIERCE CLARK, M.D.

THE issue of diet for the epileptic has always been a storm center, and much has been said as to its influence on the frequency and severity of seizures. If we suppose one is to assume a particular toxic or autotoxic theory for the disease, then the arraignment of the diet issues is practically endless; if, on the contrary, we suppose that the essential metabolism or developmental growth and vital maintenance of the epileptic does not differ greatly from normal

controls, then the dietetic principles for the epileptic become relatively simple. One must not forget, however, that by and large the epileptic possesses an inferior organism; that is, his vital energy is quantitatively and perhaps qualitatively inferior to the so-called norm and in consequence one may here find reasons for a deeper speculative intent in his diet than otherwise might prevail.

What are some of the primary faults in the ingestion of foods to which the epileptic seems most liable? Perhaps the one most generally recognized is that the epileptic as a class is prone to eat hurriedly and to take inordinately large quantities of the richer proteid foods. The first fault is the more difficult one to correct, and only by the more insistent reminding can the epileptic youth be trained out of this habit tendency. By serving the meals more slowly and giving coarse and rather dry articles, one may retard the epileptic's hurried ingestion of food. Judicious rewards and deprivations may encourage epileptic children to eat more slowly. The training to overcome this habit does not essentially differ from, nor is it more difficult than in the non-epileptic child. The second fault is, however, remediable by serving the right kind of food. Ordinarily the following dietary and bran recipes may be used:

Breakfast

Allowed.	Cup of cocoa, with cream and sugar. Wheat cereal with bran, cream and a little sugar. Two soft boiled eggs, or minced chicken. Rolls, toast, pulled bread, or zwieback. Maximum amount of butter, preferably unsalted. Plenty of stewed fruit.
None.	No hot bread.

Luncheon

None.	No soups; liquids restricted to less than one glass. No steak, roast beef, pork, salt fish, or shellfish. No sweetbreads or kidneys. No radishes, raw celery.
	Choice of fresh fish, chicken, mutton, lamb. Fowl of all kinds, except domestic duck or goose.
Freely.	Peas, beans, spinach, samp, rice, macaroni, spaghetti. Any vegetable that may be put through a puree sieve, such as turnips, carrots, etc. Boiled potatoes may be taken occasionally, and thoroughly masticated. Tender beets and oyster plant, stewed. Green salads with olive oil dressing.
Dessert.	Choice of rice or bread pudding, farina, cornstarch, blanc mange, prune souffle, tapioca, ice cream. Baked apple with cream, stewed figs, dates and prunes.
None.	No oranges, grapefruit or raw apples.
Allowed.	Cream cheese, Camembert, pot cheese.

Dinner

Same variety as for luncheon.

While liquids are restricted at meals, water may be taken freely between meals.

BRAN RECIPES

Yeast Bran Bread or Muffins

1½ cups milk, 3 teaspoonfuls molasses, 3 tablespoons fat, 1½ cakes compressed yeast, ½ cup lukewarm water, 2¼ cups white flour, 1¾ cups graham flour, 1 tablespoon salt, 2 cups bran.

Scald the milk, then cool it to blood temperature. Blend the molasses, fat and yeast with the lukewarm water to make a smooth paste. Add the molasses mixture to the lukewarm milk. Add flour to make a sponge or thick batter. Beat the sponge from 3 to 5 minutes, cover, and put in warm place until double in bulk.

Add salt and bran, and beat dough hard from 3 to 5 minutes. The dough should be of the consistency of soft baking powder biscuit dough. Half fill with dough a well greased bread tin or muffin pan; then lightly rub the top of dough with fat. Let stand in warm place until double in size, then bake one hour.

Raisins, from ½ to 1 cup (soaked from 1 to 2 minutes in boiling water and then dried), or ½ cup walnut meats cut in slices, or both, may be added if desired.

Bran Biscuit

½ cup wheat bran, ½ cup improved graham flour, 1 teaspoon baking powder, 1 teaspoon melted butter, 1 teaspoon salt, milk.

Sift dry ingredients, rub in the butter and add milk to make a soft dough. Roll out and bake in hot oven.

Bran Mashed Potatoes

2 cups hot mashed potatoes, freshly prepared, ¼ teaspoon pepper, ¼ teaspoon salt, 1 to 3 tablespoons butter, 1/3 to ¾ cups hot milk or cream, ½ cup bran.

Add the four seasonings to the potatoes and whip mixture until light. Stir in bran and serve.

Bran Griddle Cakes

1 cup bran, 1 tablespoon sugar, ½ tablespoon butter, 1 cup flour, ½ teaspoon salt, 1 cup milk, 1 egg.

Mix dry materials. Add egg slightly beaten, then milk and butter. Beat thoroughly and bake on hot griddle. This amount will make 20 cakes.

The main purpose of the above diet is twofold: to supply the epileptic with a relatively low proteid ration and at the same time to feed him such foods as will give the freest release possible from constipation. The epileptic's habit of eating hurriedly may be explained by an undue persistence in infantile habits, which as we have seen is but a part of the infantility of his makeup. The tendency to be unduly fond of meat is more difficult to interpret. As the epileptic is not a vigorously active individual, one naturally turns to the fact that he consumes great quantities of energy in his seizures and therefore naturally craves large quantities of energy producing foods. But one does not find the great ingestors of proteids necessarily among those epileptics having the most frequent or severe attacks. We may, however, find a more plausible explanation in the fact that foods may and often are used as a form of stimulant. What is more plausible than for the epileptic, cut off from alcoholic indulgence and even mild stimulants such as tea and coffee, and

even from the use of such mild narcotics as tobacco, should try to compensate by gourmandizing rich foods? In my experience it is not difficult for the average epileptic, once the idea is explained to him, to forego his gourmandizing habits. On the contrary he is usually most anxious in such small affairs of diet to conform to rule. It may be said that the diet for the epileptic is not properly adjusted until one is able to maintain fair bodily weight and vigor and correct the usually sluggish digestion by the diet alone. Pills, potions and constipation should have no place in the proper treatment of the epileptic especially after sedation is discontinued and eliminated from the epileptic economy.

The effects of overeating are fairly well known. It causes congestion of the liver and biliousness, and the stomach and intestines become engorged. The tongue becomes heavily coated, the composition of the bodily secretions is altered, the urine becomes overloaded with salts, and constipation ensues. Chronic overeating so clogs the body that the organs of elimination and excretion are unable to work, intestinal stasis follows, surplus material putrefies, the urinary tract becomes infected, the circulation becomes involved and the whole system is poisoned. Many mental and physical ills result, and there may ensue a state of lassitude, fatigue, drowsiness, headache, and even mental stupor.

Fasting as a cure in general has been in use in religious ceremonials since very ancient times, and its use in medicine is perhaps equally ancient. Temporary denutrition exercises a favorable influence in certain disorders, more particularly of the alimentary tract, such as intestinal autointoxication, toxemia, etc., as during the fast nature makes an effort to rid the body of effete material. The body begins to lessen its output of energy, the respiratory movements slow down, the temperature becomes slightly subnormal and the digestive secretions lessen in quantity. As fasting is continued, it is claimed that there is a retrenchment of the assimulative functions which reacts on the intestines; the colon contracts and the small intestine retains all but the most irritating ingesta. Too long a fast, therefore, may end in disastrous results.

Without any regard to a calory or balanced ration, the epileptic has been taught for years to regard as essential a bland diet in which there should be nothing which is indigestible, to take small meals, often if need be, and avoid the habit of bolting food. The low protein diet is also an old resource in the hygienic management of epilepsy and may be found described in standard works on dietetics. This does not differ from the diets recommended in nephritis, eclampsia, etc. It is often found to work well in practice and its theoretic justification aside from this is variously explained. Once when nitrogen was thought to be the source of animal motor energy it was doubtless regarded as a convulsivant in itself. Since this idea has been exploded it is usually surmised that the putrefaction or anomalous digestion of protein either exerts a reflex stimulation of the convulsive mechanism, or that certain nitrogenous split products formed are directly toxic. The low protein diet may also be given in the form of the milk diet or milk-vegetable regimen.

Over and above the simple bland and low protein diets two others loom which are of prime importance in the treatment of epileptics. One is the complete fast for a period of two weeks, more or less. It is obvious at the start that this cannot be a true diet but only an emergency measure. Even in the form of underfeeding it would not be permissible for a steady resource. The success of the method seems to indicate that in certain subjects food is actually the cause of the convulsions. The other important resource is the salt-free or salt-poor diet of Richet and Toulouse. This does not differ materially from other diets of this type which are used, for example, in renal oedema. The original diet recommended was salt-poor rather than salt-free and its failure in certain cases seems to have been due to this cause. In itself the salt-free diet is not indicated in the treatment of epilepsy but because it enables the physician to reduce greatly the dose of bromine. Its discussion, therefore, belongs chiefly under the bromine treatment. Mirailles of Nantes who has used the diet since its first introduction into practice insists on absolute freedom from salt although this diet is very objectionable to the average epileptic who seems to crave salt. The advantage of this diet if persevered in lies in the prospect of securing relative recovery without intercurrent bromism. Mirailles claims to have cured over half the patients who adhered to the diet over the requisite long periods.

Suspicion still predominates that some toxic substance is responsible for the fits in idiopathic or essential epileptics. As the intestines are the one possible site for the origin of such toxins, it is conceivable that they could arise from faults in digestion, from fermentation produced by bacterial growth, or in other ways. The supposition that they arise by fermentation has led to measures directed toward changing the flora of the intestinal tract. This has sometimes been accomplished by drastic means, but so far without lasting therapeutic success. Efforts to control epilepsy by dietary regulation have been attempted for years, and heretofore have been largely empiric. Within the past few years prolonged abstinence from food of all kinds has been somewhat extensively exploited and has been the subject of special study.

Articles on the starvation treatment have been published by Geyelin of New York and Goldbloom of Montreal. The idea seems to have emanated from an osteopathic physician whose technique consisted of alternate fasting and

feeding periods. The duration of the former was four or five days and the latter three weeks. Arrests of the seizures from two to three years were claimed. Geyelin treated 26 patients with this method and after a number of trials fixed the length of the fasts at twenty days. In all but a few the seizures ceased by the tenth day, and after resumption of the ordinary diet two are said to have been permanently cured while most of the others improved. Goldbloom saw great temporary improvement although the fits slowly returned to their original weekly average. Not all epileptics can be favorably influenced even temporarily by total fasting, and in one case fasting actually seemed to have precipitated status epilepticus[1].

Weeks, Renner, Allen and Wishart[2], working with patients at the New Jersey State Village for Epileptics at Skillman, have studied the effects of complete fasting and also of a non-nutritive bulk diet continued for periods of three weeks. In many cases the frequency of seizures decreased, in some they ceased entirely, and in others there was no change. After the termination of the fast the attacks generally recurred as frequently as before. Weeks and his co-workers also studied small groups of patients who were maintained for several weeks on high protein, high calory, high carbohydrate and high fat diets, and arrived at the conclusion that none of these diets had a demonstrable relation to the frequency of fits. These results are somewhat disconcertingly at variance with generally prevailing opinion, and conflict with the observations reported by Cuneo that the incidence of fits was much greater with a high carbohydrate than with a high protein diet.

It would seem as though one must conclude that the nature of the diet had little or nothing to do with the frequency or severity of attacks, but most epileptologists find that reducing the sodium chloride intake in addition to giving bromides exerts a marked favorable effect. This point seems fairly well established and should always be considered in prescribing a suitable diet for epileptics in case sedatives are employed. The majority of clinicians favor a low protein diet and one particularly low in purin bodies. The deleterious effect of the high protein is no doubt due to the frequency with which the ingestion of suitable amounts of meat products is accompanied by intestinal putrefaction. This is indicated by the presence of indol in the urine, and while this has in itself often no ill effect, it is frequently an index of other intestinal poisons which may still further lower the nervous stability and thus lead to the easy production of a seizure. Therefore the prevention of intestinal decomposition is absolutely indicated, and every means should be taken to obviate its production. Among the best means of prevention is the maintenance of a low protein diet with emphasis placed on the reduction of animal protein; the patient may be placed on a strict vegetarian diet for a few days and later on a lacto-ovo-vegetarian regimen. When the indican is reduced to a minimum small amounts of meat may be again added, particularly if the patient is able to take a sufficient amount of exercise. Aside from these restrictions, an epileptic may eat almost anything that is in itself digestible, keeping in mind that acute or chronic indigestion and constipation favor the production of attacks. In addition to eliminating intestinal decomposition by proper diet, peristalsis may be promoted and waste products may be mechanically removed by colon irrigation.

From the foregoing one may draw the inference that there is no justification for exploiting any particular diet for general application in the management of epilepsy. Common-sense avoidance of foods that tend to produce gastric or intestinal indigestion, with due regard for individual pecularities in the tolerance of certain articles, must continue to guide us in the selection of the appropriate diet for epileptics.

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ALUMINUM AND POTASSIUM NITRATE POULTICE

BY EDWARD J. SAWYER, M.D.

THE use of potassium and aluminum nitrate poultice of oatmeal as described by Thorek in *The Illinois Medical Journal*, August, 1925, has been adopted by the Arlington Mills Clinic since with excellent results in selected cases. Benedict, in a Cabot Case Report, Number 12184, mentions its application in a severe trauma to hand. We report below types of cases in which we have found it helpful.

HEMATOGENOUS INFECTIONS FOLLOWING LESSENED RESISTANCE FROM TRAUMA

CASE H. P. Hit dorsum of left thumb with hammer three days previously. Reported to Clinic with severe pain in ball of thumb, generalized redness, with but very little swelling. There was no evident focus and it appeared similar to a lymphangitis. An aluminum and potassium nitrate poultice was applied for 24 hours, at the end of which time a sharply defined area of sepsis appeared along terminal branch

of dorsalis pollicis artery. An incision was carried to attachment of flexor longus pollicis, where pus was encountered. There was no involvement of phalange or tendon sheath. After 24 hours more of poultice there was only a serous discharge.

INFECTIONS RESULTING FROM OLD FOREIGN BODIES

CASE C. F. This was similar to preceding case except patient believed that a small piece of brass wire entered thumb three weeks previously. His thumb had pained intermittently for one week and then he reported with a condition almost identical with the above case. Poultices were applied for 72 hours. Incision in same area as H. P.'s was indicated; pus was found deep in pulp of thumb. No foreign body seen. Poultices were omitted afterward and healing was rapid and uneventful.

We believe that localization of the infection was accelerated and that the area for exact incision was outlined. It is possible that there was lowering of bacterial virulence as shown by rapidity of healing.

INDOLENT VARICOSE ULCERS

CASE A. Z. Presented an indolent varicose ulcer of several years' duration which had been treated by various methods. Like several of these cases, she was forced to be at work in a standing position all day and had been unable to receive proper treatment. Much reduced potassium and aluminum nitrate poultices were applied often enough to keep a mild hyperemic irritation. Granulation was improved and stimulated, although it is doubtful whether we can obtain complete closure while she is ambulatory. We reduced the strength of the poultices from those of Thorek because of pain.

EXTRUSION OF SEQUESTRA

CASE E. R. Has had small draining sinus of upper end of right tibia since accident two years ago. Present age 18. Application of poultice for 72 hours produced profuse discharge with marked reaction around sinus and extrusion of small sequestrum in 24 hours more. Poulticing was continued for 24 hours, followed by alcohol dressings for one week. Sinus closed and has remained so for two months.

We find that there is a marked reaction to the poultice in the strength advised by Dr. Thorek and that it is advisable to acquaint the patient with this in advance. Two patients removed the poultice themselves on account of intensive burning sensation. This reaction is followed, however, by complete relief of pain.

The Massachusetts Medical Society

THE CONTROL OF THE COMMUNICABLE DISEASES PREVALENT IN MASSACHUSETTS*

With a Study of the Mortality Due to Them During the Past Seventy-Five Years

BY EDWARD G. HUBER, M.D.

(Continued from page 279)

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2. PHTHISIS

The clinical recognition of phthisis extends back to antiquity but there is no evidence that any preventive measures were applied until a little over a century ago, and that took place in various parts of southwestern Europe. It is said that in the latter part of the eighteenth century Naples had laws for isolating the victims of consumption and for disinfecting dwelling houses where the patients had lived. It was also compulsory to report all cases and heavy penalties were attached to violations of the law. Villemin's work in 1865 was the first actual proof of the transmissibility of the disease. In 1898 Massachusetts led in the anti-tuberculosis campaign by establishing a state sanatorium. She has maintained her lead, so that there is nowhere any better work being done against tuberculosis than in Massachusetts.

From 1849 to 1922, 12.6% of the reported deaths in Masachusetts were charged to pulmonary tuberculosis. The diagnoses under which these reports were made were as follows: "consumption," 1849-1900; "tubercle of the lungs," 1901-1914; "tuberculosis of the lungs," 1915-1920; and "tuberculosis of the respiratory system" since 1921. Tuberculosis other than pulmonary is not being considered in this analysis for the reason that it has undergone so many changes in certification in the few years these cases have been reported that the data are not yet worth much study. In addition it is not communicable in the same sense that term is used in this study for pulmonary tuberculosis is, under ordinary circumstances, the only form of the disease in man that is communicable, and therefore it holds the chief interest from that standpoint. Ordinarily a mortality study of pulmonary tuberculosis does not extend further back than the last two or three decades because before then the only form of tuberculosis in the mortality reports was consumption, and also because the diagnosis was not so certain as it now is. But

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with a full sense of the inaccuracies in all the statistical data, the figures as far back as 1849 have been examined. Pulmonary tuberculosis has been one of the most distinctive diseases, clinically, ever since Hippocrates, and the probability is that a large proportion of the deaths from consumption were recognized as such. The stigma which has always been attached to pulmonary tuberculosis no doubt caused many a physician to neglect to report a certain proportion of deaths under the correct diagnosis. Other cases still, were unrecognized, and some that were not due to the tubercle bacillus were no doubt ascribed to it.

Table 3 shows that over a fourth of all reported deaths from pulmonary tuberculosis were in the age group 20-29. The next older group, 30-39 had about a fourth less than this. Less than a fifth of all pulmonary tuberculosis deaths were at ages under 20.

TABLE 3

PULMONARY TUBERCULOSIS, MASSACHUSETTS, 1849-1922

Age period	Deaths	Per cent. of total deaths
Under 5	18,180	5.
5- 9	3,381	0.9
10-14	6,321	1.7
15-19	31,980	8.9
20-29	102,234	28.3
30-39	76,752	21.3
40-59	81,961	22.7
Over 60	40,295	11.1

Table 4 shows a rather striking phenomenon. Every year until 1898 female deaths outnumbered the male deaths, the percentages for the entire period being 55.1 and 44.9 respectively.

In order to study this matter more thoroughly crude rates as well as rates specific for age and sex were computed. In figure 18 the highest mortality rate for phthisis which Massachusetts has ever had is seen to have been in 1853 when it reached 436 per hundred thousand. It then declined uniformly until the early seventies when there was a slight rise, possibly influenced by the then existing disturbed economic conditions. But another decline set in within a year or two which seemed to have about the same slope as the preceding one. This was again interrupted, in the early eighties, by another increase. At about this time, in 1885, the actual number of deaths reported as due to consumption reached its high point, 5955 being recorded. Since that time the rate of decline has been uniform with very little scattering from a straight line until 1916. Distinct as this rate of decline is, the actual drop is probably greater than that shown in the figures, for as diagnostic methods have improved. more and more cases have been recognized, and reported. The greatest increase in the rate was of course in 1918. Just how much of this was due directly to the influenza pandemic cannot be known. That the phthisis rate began to rise in 1916, two years before the pandemic, can be seen in figure 18. The 1918 crest is relatively higher than any one of the preceding ones, just as the succeeding decline is more precipitate. All other declines from crests in previous years were followed by increased rates. There has as yet been no increase since the 1920 drop but the rate for 1922 is about the same as that for 1921, and the two are practically on the trend line from 1881. The sharp decline from the high rate in 1918 may be due to the fact that

TABLE 4

PULMONARY TUBERCULOSIS IN MASSACHUSETTS, 1849-1922
AGE AND SEX DISTRIBUTION OF DEATHS BEFORE AND AFTER 1898

	1849-1897				1898-1922			
	Males		Females		Males		Females	
Age groups	Deaths	Per cent. of total deaths	Deaths	Per cent. of total deaths	Deaths	Per cent. of total deaths	Deaths	Per cent. of total deaths
Under 5	7,508	3.0	7,140	2.9	1,923	1.7	1,609	1.4
5- 9	1,082	0.4	1,477	0.6	341	0.3	481	0.4
10-14	1,277	0.5	3,362	1.3	441	0.4	1,241	1.1
15-19	7,971	3.2	15,881	6.4	3,255	2.9	4,873	4.4
20-29	20,144	12.1	41,062	16.5	15,084	13.5	15,944	14.3
30-39	22,370	9.	26,828	10.8	15,271	13.7	12,283	11.
40-59	26,708	10.7	25,829	10.3	19,049	17.	10,375	9.3
Over 60	14,842	6.	15,861	6.3	5,558	5.	4,034	3.6
Total	111,902	44.9	137,440	55.1	60,922	54.5	50,840	45.5
Total deaths	249,342				111,762			
Grand total	361,104							

Beginning in 1898 the reverse was the case each year, the percentages being males 54.5, females 45.5. This is also shown graphically in figure 17.

many died from phthisis during the influenza pandemic who would ordinarily have lived until 1919, 1920, or 1921 had not influenza hastened the prospective ultimately fatal outcome.

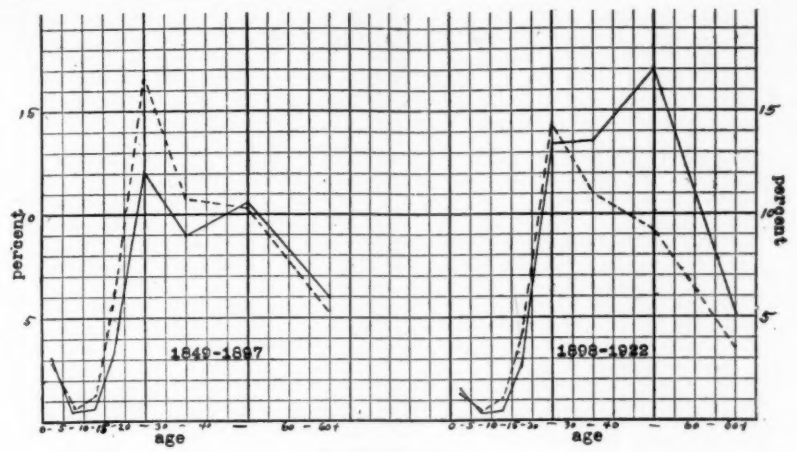

FIGURE 17
MASSACHUSETTS, 1849-1922
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Age and sex variations in mortality from phthisis before and after 1898. Percent of total cases at specified ages.

——— male
- - - - - - - - - - female

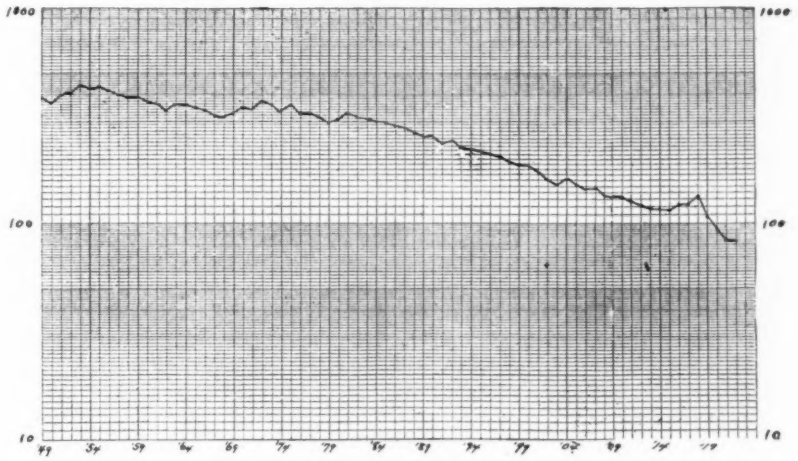

FIGURE 18
PULMONARY TUBERCULOSIS
MASSACHUSETTS, 1849-1922
Crude Mortality Rates per 100,000

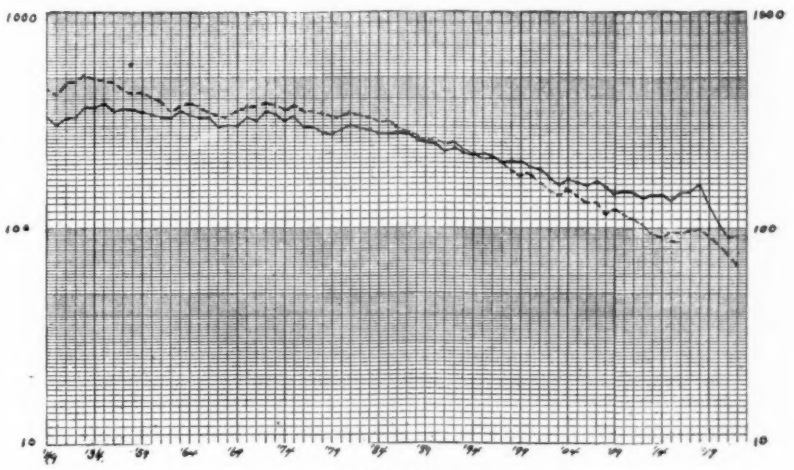

FIGURE 19
PULMONARY TUBERCULOSIS
MASSACHUSETTS, 1849-1922
Specific Sex Mortality Rates per 100,000

——— males
- - - - - - - - - - females

Figure 19 shows that the decline in the death rate has been much more marked in females. The male rate dropped only very slightly until the late eighties; the female rate was much higher in 1849, almost paralleled it for two decades and then began a much more rapid descent crossing the curve for the male rate in the early nineties. The rate of decline has continued to be greater for females than for males and was not disturbed as much in 1918 as was the male rate. There are no reliable morbidity figures but it is not probable that morbidity has decreased, if at all, at this rate.

Figures 20-27 analyze the crude rates shown in figure 16 and figure 19. In figure 20 (age under 5), the rates for the sexes do not differ materially at any time. The curve is more irregular, for the actual number of deaths is small, and the rate is therefore subject to relatively greater fluctuations. The rate of decline for each sex at this age has been much greater than that of the crude rate, especially since 1899. Even in 1918 there was no marked departure from the trend line. Age group 5-9 (fig. 21) shows a rate which has greater fluctuations than that of any other age, since only 0.9% of all phthisis deaths were in this group. In this figure the scale differs from that of the others for no other age group has a rate which has gone so far below ten. In general the female rate at this age has always been higher than the male. The decline since

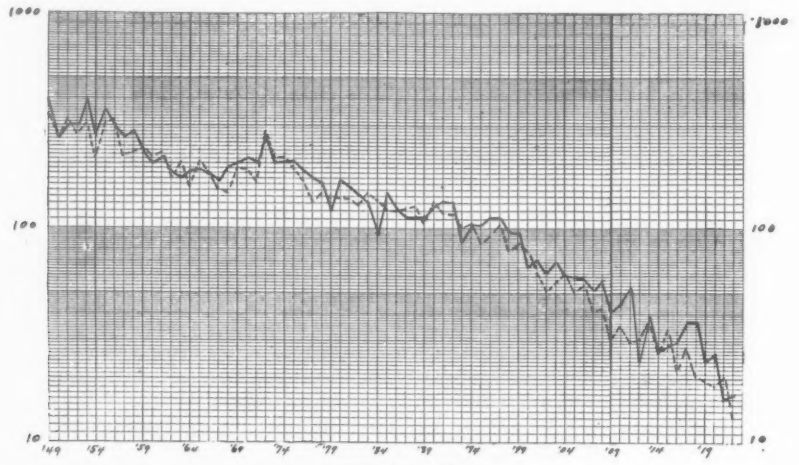

FIGURE 20

PULMONARY TUBERCULOSIS
MASSACHUSETTS, 1849-1922
Specific Age and Sex Mortality Rates per 100,000
Age under 5
——— males
---------- females

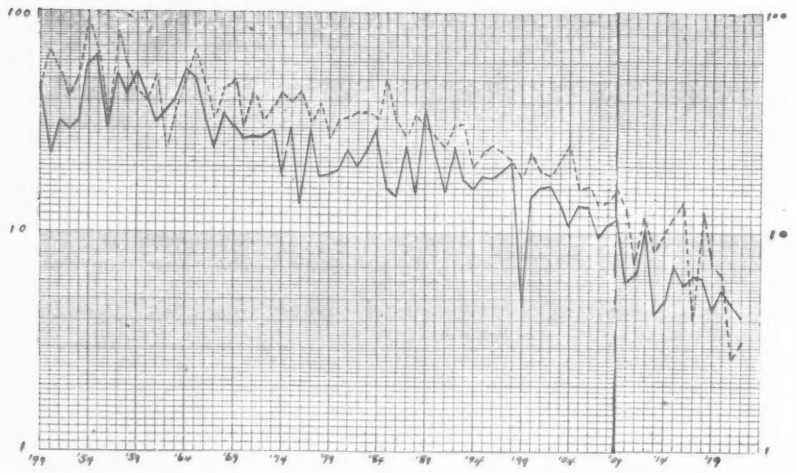

FIGURE 21

PULMONARY TUBERCULOSIS
MASSACHUSETTS, 1849-1922
Specific Age and Sex Mortality Rates per 100,000
Age 5-9
——— males
---------- females

the beginning of this century has been greater than that of the crude rate but not so markedly so as that of the younger age group. At age 10-14 (fig. 22) there is a very marked difference between the rates for the two sexes but the curves remain practically parallel through the entire 74 years. There was a slight irregular decline in both rates until about 1890 when it became more marked and regular. The male rates fluctuated more for there were about three times as many female deaths as male in this age group (table 4). The influenza epidemic had but slight effect at this age. In age group 15-19 (fig. 23), the rates are higher and the curve smoother. The female rate has always been greater than the male but the tendency

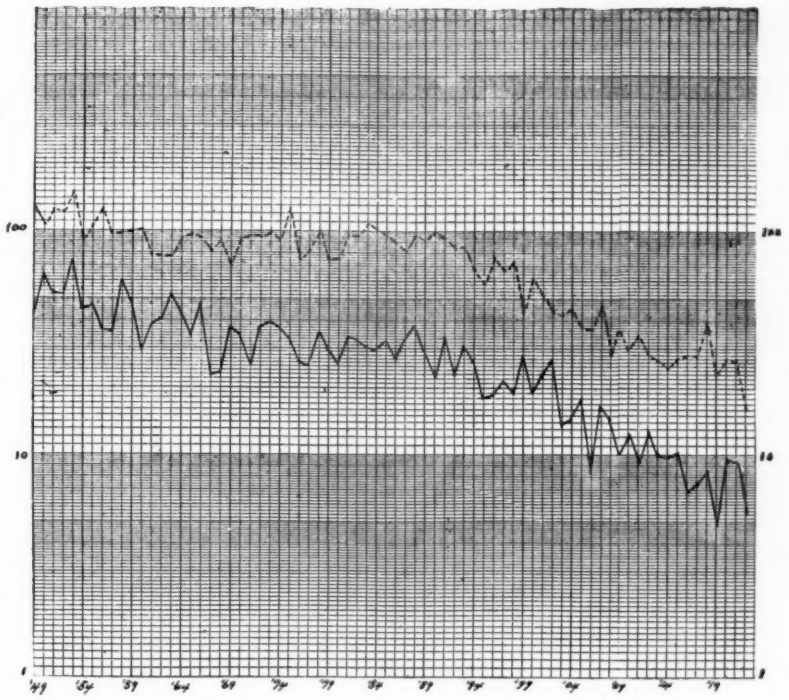

FIGURE 22
PULMONARY TUBERCULOSIS
MASSACHUSETTS, 1849-1922
Specific Age and Sex Mortality Rates per 100,000
Age 10-14
——— males
---------- females

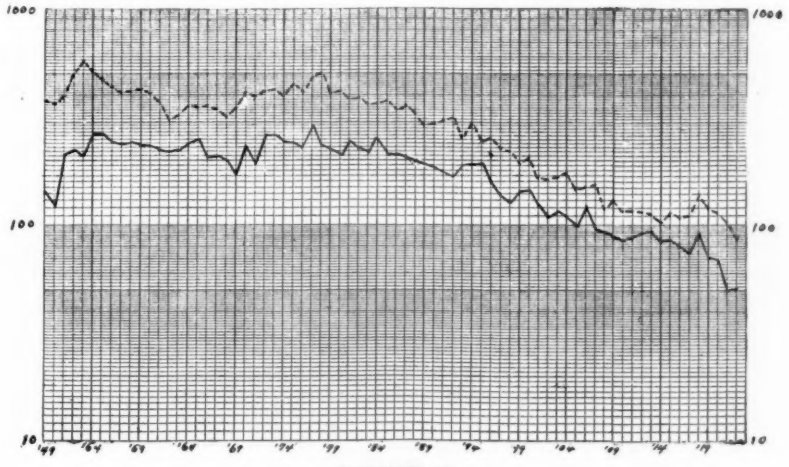

FIGURE 23
PULMONARY TUBERCULOSIS
MASSACHUSETTS, 1849-1922
Specific Age and Sex Mortality Rates per 100,000
Age 15-19
——— males
---------- females

has been to approach the latter. The downward trend for both sexes has been regular since about 1879, except for 1918. In age group 20-29 (fig. 24) the female rate was higher until 1898. At about that time the downward trend of the male rate became the same as that of the female rate so the two rates have remained the same. Both were much disturbed in 1918. At ages 30-39 (fig. 25) the female rate has had a fairly uniform decline ever since 1854 except for about two decades, 1865-1885, when it was practically the same as the male rate which had been stationary since 1854. From 1885 to 1903 both rates dropped together but in the latter year the male rate became practically stationary while the female rate continued on the same trend line on which it had started in 1885. The female rate was not so much affected in 1918 as was the male. The rate of decline of the latter for this age has been the lowest of all the groups. At age 40-59 (fig. 26) and over 60 (fig. 27) the male and female rates were the same in 1849 but the latter have declined much more rapidly. The greatest actual numerical decrease in the rates of any age group has been in females over 60, while the greatest relative drop was in both sexes at age under 5.

The causes for this marked downward trend in the death rate from phthisis in both sexes and at all ages have been a matter for much comment. The literature on tuberculosis is

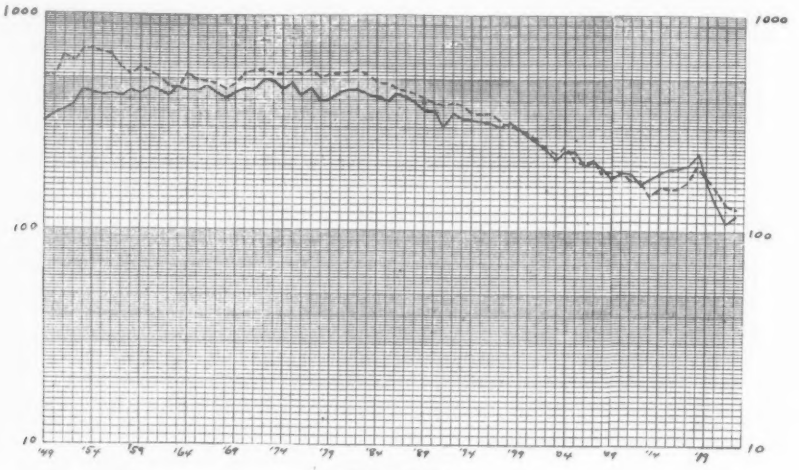

FIGURE 24
PULMONARY TUBERCULOSIS
MASSACHUSETTS, 1849-1922
Specific Age and Sex Mortality Rates per 100,000
Age 20-29
——— males
---------- females

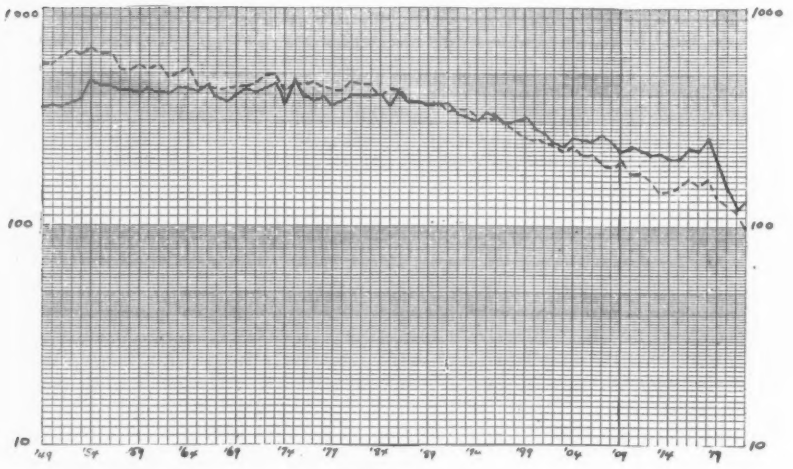

FIGURE 25
PULMONARY TUBERCULOSIS
MASSACHUSETTS, 1849-1922
Specific Age and Sex Mortality Rates per 100,000
Age 30-39
——— males
---------- females

very voluminous and many have tried to define the causes. There are some who insist that the decline has been due to race improvement by selection. The fact that the results of a process of evolution cannot possibly be shown by so great a rate of decline over so short a period, and that the rate for females has decreased even more rapidly than that for males, certainly undermine such a theory. In all probability a great many factors have combined to bring about this great decrease in mortality. The fall began years before any anti-tuberculosis work was begun,—even before the cause of the disease was known. Between 1881 and 1915 the rate curve is almost a straight line on semi-logarithmic paper. There was no change in the rate of fall after the bacillus was discovered, and none to show for the active anti-tuberculosis work instituted early in this century. However it is not reasonable to say that public health measures contributed nothing to the general result. Such general factors as:—the general improvement in living and working conditions with higher wages and shorter working hours; progress in personal and industrial hygiene; development of preventive medicine together with general health education; and increased attention to the health of children have undoubtedly had a beneficent effect on the tuberculosis mortality rate. Such specific measures as the increasingly prevalent practice of isolating active cases of pulmonary tuberculosis and of making earlier diagnoses have contributed their share. Any public

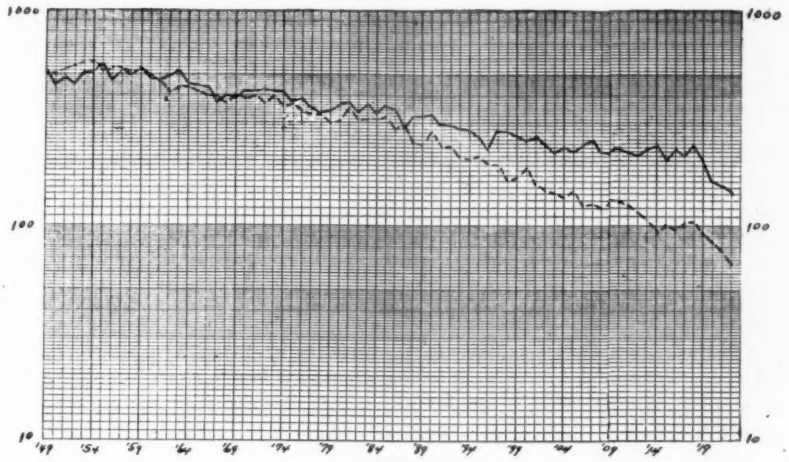

FIGURE 26
PULMONARY TUBERCULOSIS
MASSACHUSETTS, 1849-1922
Specific Age and Sex Mortality Rates per 100,000
Age 40-59
——— males
---------- females

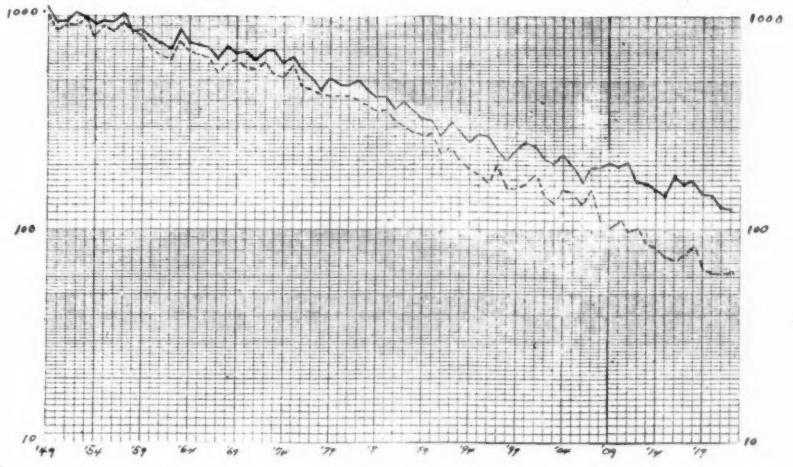

FIGURE 27
PULMONARY TUBERCULOSIS
MASSACHUSETTS, 1849-1922
Specific Age and Sex Mortality Rates per 100,000
Age over 60
——— males
---------- females

health measure which was of benefit to individuals increased their resistance to a certain extent, not by preventing infection, but by preventing infection from becoming disease. So far as is known tuberculosis and pneumonia are the only communicable diseases which are able to take advantage of lowered resistance of the individual. Hazen's theory that other diseases as well as typhoid have been decreased by the substitution of pure for contaminated water supplies, may well be true as far as tuberculosis is concerned for diseases caused by contaminated water could activate tuberculosis contracted in childhood. But it is quite possible that the influence of sanitation on the decline of the rate has been overestimated and that insufficient credit has been given to natural immunization of the race. Very probably the morbidity rate has not declined with the mortality, and therefore the actual amount of active tuberculosis present has not diminished, and may even have increased, since public hygiene has tended to prevent infection from becoming disease. As a result there has been, probably, a progressively increasing proportion of people getting natural vaccination.

It is unreasonable to suppose that the future rate of decline will continue along the line of the drop since 1918. In fact the 1922 rate is the same, practically, as that of 1921, and it is very possible that the rate may increase slightly in the next few years, reasoning from past experiences. Dublin has prophesied a further decline in the tuberculosis rate to 50, basing his forecast on a compromise between a continuation of the decline from 1900 to 1915 (on natural paper), and an extension of the line from 1918 to 1921. It would seem to be much more reasonable to base a forecast on an extrapolation of the rate of decline before the 1918 peak. There must of necessity be a limit to the reduction of the tuberculosis rate just as there has been in typhoid. If it is true that we become immunized by repeated small doses of tubercle bacilli in childhood, then it would be very unwise to hope for complete eradication of the disease. In that event there would be a non-immune population which would succumb as quickly as aboriginal peoples when the disease is introduced among them. In order for the great majority to become vaccinated, some few must receive massive doses. The slogan "no tuberculosis by 1950" seems to be one very improbable of realization.

It is difficult to account for the greater decline in the female rate above age 20 than in the similar male group. It is customary to ascribe the higher rate in females between 5 and 20 to their lower resistance due to the developmental changes taking place in them. In the absence of better information this reason must be accepted. The decline in the female rate over 20 may possibly be due to the fact that women in the homes are enabled to respond more quickly to better living conditions than the men who spend their days at work. Improvement in industrial conditions has taken place comparatively recently, so the laboring man has not been able to take full advantage of the improvement in conditions so quickly as has his wife. To be sure, the rate for the girls in the family has not declined faster than that of the boys, but we can fall back on the greater susceptibility of girls because of developmental changes.

Properly speaking, there is no such thing as "control" of tuberculosis in the sense in which we try to control an epidemic. The disease is easily resisted and overcome and therefore does not exist in epidemic form. Figure 28 shows the slightly increasing tendency to the occurrence of more deaths from phthisis in the spring. This is probably due to diminished resistance at that time of year; certainly not to any epidemics. Prophylactic measures in phthisis are preventive, much more in the individual sense than with any other disease.

Unfortunately, although the etiology of the disease has been definitely known for forty years there is still profound ignorance as to the relative importance of the various suspected methods of transmission of the virus from the sick to the well. Our knowledge of why one individual resists the disease and another does not, is also defective. The idea that the great majority either become diseased or immunized in childhood is generally accepted although there is no proof. Estimates are occasionally made by enthusiastic writers as to what proportion of cases originate in childhood, but there is no basis whatever for such figures. The mechanism of the process by which an individual once having been cured of the disease again becomes a victim, is unknown.

Assuming that the great majority of infections take place in childhood the most important prophylactic step until a specific preventive or cure has been found is to remove the active case from the home where there are children, or to send the latter away. Children living in homes with such cases are subjected to massive doses of virulent organisms direct from a lesion. Bushnell advocated a von Pirquet cutaneous test on every child, at periodic intervals after infancy, until a positive reaction is obtained. Then the child is to receive special care, as the first six months after infection are the most critical. He believed this method would do more to prevent morbidity and mortality than any other measure except keeping the infant from known contact with a consumptive. He believed that money spent in this way would be of more benefit than attempts to "clean up" a city. The child who maintains a negative test through childhood should be regarded as one needing especial care in later active years. The infective case should be so cared for in his home (if the latter is suitable)

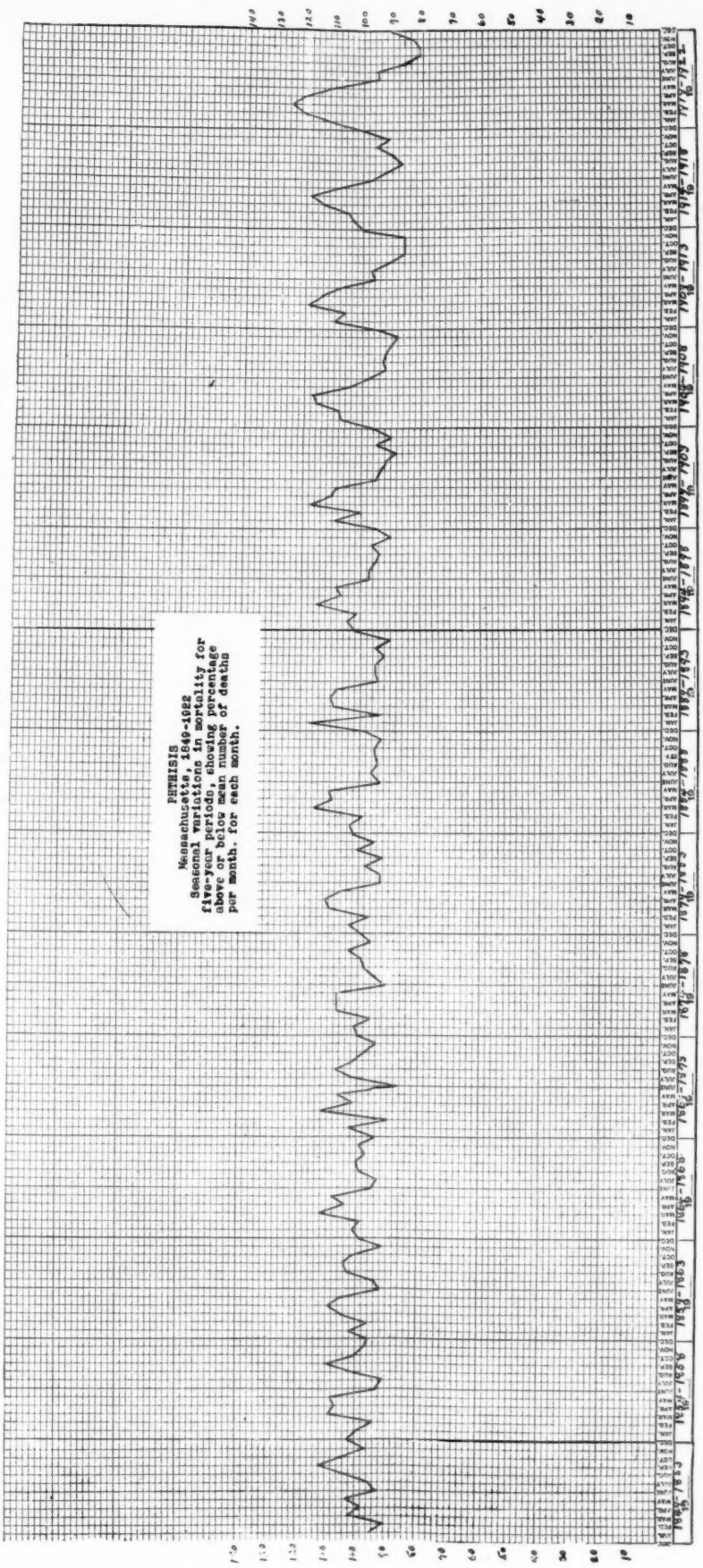
PHTHISIS
Massachusetts, 1840-1902
Seasonal variation in mortality for five-year periods, showing percentage above or below mean number of deaths per month, for each month.

FIGURE 28

or in a sanatorium, that he is prevented from infecting others even if he is careless.

Tuberculosis should continue to be a notifiable disease in order that the health department may take active steps toward protecting the children in the family. Not only actual cases, but suspects, should be reported, because of differences in the diagnostic abilities of physicians. There is considerable danger in the "chronic bronchitis" of the aged which may be a slow but active tuberculosis.

The segregation of the patient is the most important step in the anti-tuberculosis fight. In addition to the preventive aspect of sanatorium segregation there is the curative. And when, the disease arrested, the patient is returned to his home, the duty of the health department in follow-up work is clear, in order that in case the disease again becomes active immediate steps may be taken. The aim of all this work is the elimination of exposure of young children to massive doses of the infection, believing as we do that infection or immunity is acquired in childhood. If the disease merely becomes latent it may become active in adult life when vital resistance is, for some reason or other, lowered.

A detailed examination of the remainder of the program of the anti-tuberculosis campaign has not been included in this study. Such work really requires almost the complete armamentarium of the health department. Early efforts to combat the disease met with considerable popular opposition, for the public was slow to recognize the fact that the disease was communicable. Associations whose purpose was the education of the people and the securing of needed legislation such as anti-spitting ordinances were formed. One of the earliest aims of these societies was to find and cure the early case. These societies have enormously increased in membership, influence, and scope of work, and are now valuable adjuncts to health departments. The work in Massachusetts is conducted as well as, if not better than, that anywhere else, largely through the effective organization of the Division of Tuberculosis of the State Department of Health. As Zinsser says, the greatest weapons in the fight are public coöperation and public education in connection with a strenuous and extensive effort made by local, state, and federal authorities. The present program seems to be working satisfactorily; all that appears to be needed is an occasional improvement or addition. Education of the public is much more essential even, than in the other communicable diseases. Haven Emerson outlines the results to be accomplished in a campaign as follows: reduction of dosage or distribution of tubercle bacilli; reduction of frequency of exposure to infection and reinfection; and reduction of specific predisposing factors in conditions of employment. As specific measures to accomplish these results he advocates:

1. Early diagnosis.
2. Bacteriological examinations of sputa.
3. Better notification.

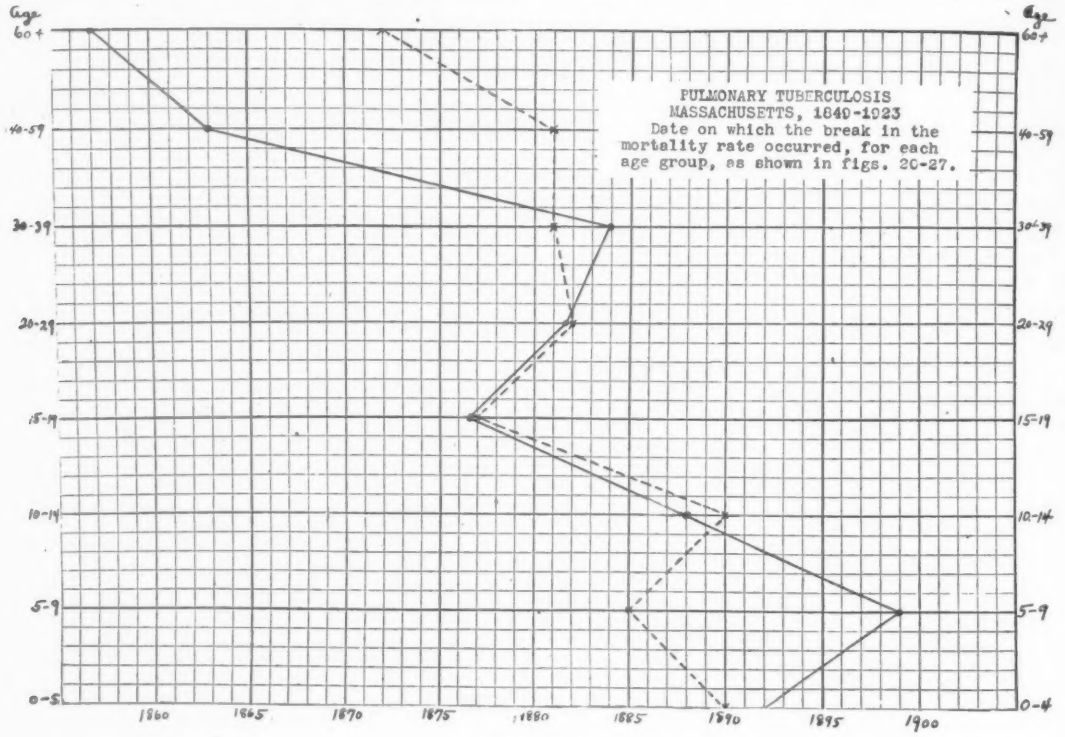

FIGURE 29

——— males
- - - - - - females

4. Segregation of cases.
5. Home nursing service for educational work, to find hidden neglected cases, and for follow-up work.
6. Enforcement of anti-spitting, and other legislation such as common use of cups, towels, etc.
7. Pasteurization of milk and exclusion of tuberculous animals from use as food.
8. Exclusion of tuberculous cases from food handler work.
9. Control of flies.

Improvement of economic and civic conditions such as housing, sanitary facilities, working conditions, and recreational opportunities will have definite influence toward a general increase in resistance. Some even go so far as to assert that nutrition is the main factor in resistance and that individuals whose nutrition is good never contract tuberculosis. Preventoria for under-nourished children, or for those from tuberculous homes, or for those whose physical condition is below par, serve an admirable purpose. The movement toward a periodic "health" examination to detect defects in their incipiency, which was instituted by Roosevelt when he required annual physical examinations of officers of the Army, and which later showed its value when the astonishingly large number of defects in drafted men was uncovered, is a valuable aid toward early diagnosis. If all suspected cases of tuberculosis found at such examinations could be referred to diagnostic clinics where experts could make the difficult diagnoses, this part of the program would be ideal.

The fact that the definite and uniform decline in the crude pulmonary tuberculosis mortality rate began in 1882 at the time of the discovery of the bacillus is shown in figure 18. But a study of figures 20 to 27 shows that the year the rate began its steady decline was different in the various age groups, and that those ages having the greatest mortality rates were the ones which dominated in the composite picture. Figure 29 shows when the break in the curve occurred in the different age groups, for each sex. The continuous line represents males, and the broken one, females. In general, in both sexes, the older the group the earlier the break. In males the range is wider, the break occurring later in the younger groups and much earlier in the old groups. The difference between the date of the break for the old groups and for the youngest was twenty-eight years for females and forty-two for males.

(To be continued)

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Case Records
of the
Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY
RICHARD C. CABOT, M.D., AND HUGH CABOT, M.D.
F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 12321

A CASE OF PARTIAL COMA

MEDICAL DEPARTMENT

A married Italian woman forty-nine years old entered March 16 complaining of weakness, a feeling of fullness under the sternum, and loss of appetite, all of three weeks' duration. She had a tendency to fall asleep even while talking. She spoke very little English. The history was obtained through an interpreter.

At the onset of the illness she felt tired, weak and drowsy. She often slept until ten o'clock, and even then would have to lie down again. Since the onset she had had ataxia, had scarcely been able to walk alone, feeling as though she were intoxicated, and frequently her legs would give out under her. She often had a feeling of pins and needles in her hands and feet. Since the onset she had had a constant feeling of fullness and discomfort under the lower part of the sternum, always worse after meals. Since the onset her appetite, usually good, had been very poor, and she had eaten very little. Occasionally she had felt dizzy. For three days she had been seeing double. She had to keep her eyes closed constantly, but whether from photophobia or drowsiness could not be absolutely ascertained. She vomited once the day before entrance to the hospital and again on the day of entrance.

An uncle died of tuberculosis.

The patient had never been ill before, and had always considered herself strong and vigorous. At twenty-one she had a moderate nosebleed from both nostrils and at the same time brought up a tablespoonful of blood. She passed the menopause a year ago.

Examination showed a poorly developed and well nourished woman lying quietly in bed. There was marked pyorrhea. The location of the apex impulse of the heart is not recorded. The left border of dullness was 9 centimeters from midsternum, 1 centimeter outside the midclavicular line. There was no other enlargement to percussion. The sounds and action were normal. There was a blowing systolic murmur at the apex and over the aortic area, transmitted to the neck. The blood pressure was 98/50. The lungs and abdomen were negative. The left knee showed an old fracture with displacement of the patella. Pelvic examination showed the cervix large, firm, and torn. There was slight bleeding after manipulation. There was considerable thick bloody discharge. The vaults were normal. Rectal examination was negative. The reflexes were normal. The eyes showed paralysis of the right internal rectus and lateral nystagmus, more marked on the right. Fundus examination showed the discs normal, moderate tortuosity of the vessels, the veins prominent.

The urine was normal in amount, specific gravity 1.020 to 1.014, no albumin or sugar, 15-30 leucocytes at two of three sediment examinations, 2-4 at the third, 2-5 red blood cells at two. Urine culture negative. Blood examination showed 7,150 to 13,350 leucocytes, 70 per cent. polynuclears, hemoglobin 80 per cent., 4,968,000 reds, smear normal. Wassermann negative. Sputum negative for tubercle bacilli. Smith stain showed the presenting organism a pneumococcus, present in large numbers; very few intracellular. The vomitus gave a negative guaiac.

X-ray of a barium meal showed slight delay in the third portion of the esophagus, but no filling defects. The stomach was of the orthotonic type, normal in position. There was an irregularity of the cardia over which peristalsis was seen to pass. There was a slight trace of six hour residue. The first portion of the duodenum was normal in position and contour. The six-hour meal had reached the cecum. The irregularity of the cardia was probably due to pressure from gas in the colon. There was no definite evidence of organic disease in the stomach or duodenum.

The temperature was 100° at entrance. Afterwards the chart was not remarkable until March 22, when there was a terminal rise of temperature to 103.2°, pulse to 130 and respiration to 34.

The day of entrance a lumbar puncture was done. 10 cubic centimeters of clear colorless fluid was obtained, initial pressure 60 millimeters, pulse and respiratory oscillations normal, pressure on jugular compression 200, return 60, after withdrawal of 5 cubic centimeters of fluid pressure 20, after withdrawal of 10 cubic centimeters zero. 10 cells. Chlorides 713, sugar 65; plasma chlorides 583, sugar 107. Spinal fluid protein 27, goldsol 0011100000, Wassermann negative.

The day after admission the systolic murmur was heard all over the precordia. There was a tendency for the left eyelid to be wider open than the right. The patient kept her eyes closed even when she talked. There was a questionable Babinski on the right. The blood pressure was 120/70. She kept complaining of difficulty in the substernal region related to swal-

lowing. The exact nature of this was not determinable. By March 19 she was sleeping all the time except when awakened to talk.

March 24 she developed a diffuse bronchitis. The following night there were many moist râles in the trachea and throughout both lungs. She was given atropin and was started on oxygen by a nasal catheter. Early the following morning she died.

Discussion

BY RICHARD C. CABOT, M.D.

NOTES ON THE HISTORY

1. It is a good plan, I think, in taking histories in the office or at the bedside to ask, "What is the worst thing? What troubles you most?" I try to get some one leading clue at the outset. It is not always possible, but in the majority of cases they come for jaundice, they come for vomiting, they come for headache, and it is useful to put this down as the "presenting symptom" from the analogy of the presenting part in obstetrics. We never take it very seriously. We know it may have in the end very little to do with the disease that we treat. But still it is well to record it.

2. The more I take medical histories the more I am impressed with the importance of the time element; and as I read other people's histories I do not think they are always careful enough to say how long has each symptom lasted, what came first, and what is the duration of each. Patients are quite mixed up about that until they are cross-questioned, but we bring out by questioning a great deal that is obscure to them and perhaps to other physicians. I often draw a line representing the patient's whole life. Then I put black spots along it corresponding to as many years of that total life as he has been sick, so as to get a total view of the life with the proportions of sickness and good health.

3. It is unusual to fall asleep while talking. To fall asleep while listening is quite different.

4. "A feeling of pins and needles in her hands and feet" at once gives me a suspicion. One disease shows that more than any other disease,—pernicious anemia. Nobody would make a diagnosis on that symptom alone, but there is all the difference in the world between making a diagnosis and having the possibility come into mind and remain there floating as a clue. That would go perfectly well with weakness and with trouble in the legs, both of them consistent with pernicious anemia.

5. She had what I call "dyspepsia".

6. Seeing double is a symptom we do not expect in pernicious anemia, but do expect in encephalitis lethargica.

7. I have been taking family histories ever since I went into medicine, and as I have gone over records here with the necropsy to follow I have been impressed with the rarity with which the family history helps us in the least towards diagnosis. Past history, present illness, X-ray, physical examination, laboratory tests help; family history very seldom.

8. The blood vomited was very likely the result of the nosebleed.

9. Up to the beginning of the physical examination I have no definite idea what is the matter. The two things mentioned, encephalitis and pernicious anemia, are the only vague floating suggestions so far in my mind.

NOTES ON THE PHYSICAL EXAMINATION

1. There is a distinction of course between "developed" and "nourished". Development means the size of the person. Nutrition is the obvious thing. A dwarf may be well nourished but not well developed.

2. With the total of all those figures on the circulatory system I have no definite information. There is nothing here that may not be normal.

3. The vaginal examination shows nothing probably that concerns us.

4. "Reflexes normal" concerns us. That concerns the knee-jerks, plantars, and I suppose the fundus.

5. This is lateral nystagmus, as practically all nystagmus is. A vertical nystagmus is rare.

6. As we go over many urine examinations we get used to the fact that almost everybody has some leucocytes and some red cells in the urinary sediment if we make careful examination. We cannot infer anything in particular from that.

A Physician: You mean even in a catheter specimen?

Dr. Cabot: Yes, even in a catheter specimen. We do not know that it is a catheterized specimen here.

7. I should say five million reds. Nobody can count within that number, and it does not make the slightest difference.

8. There were very few intracellular organisms, therefore they were probably not of any importance.

9. The X-ray plate shows most of the barium in the intestine. We do not get a clear outline of the duodenum. I do not believe there is anything abnormal up there. I think it is intestine showing behind. I like to commit myself before I look at what the experts say, and then check up. I do not get a distinct differentiation of the pylorus and the duodenum here.

She had of course some digestive symptoms, so they went into this examination in detail.

10. In the spinal fluid ten cells is right on the edge between normal and abnormal. The spinal fluid protein is low. I should say that we do not know any more after this than we did before, except that we have no evidence of meningitis.

11. The blood pressure is normal. It was low in the beginning.

12. She comes back to the difficulty in swallowing. I had rather made light of it in the beginning, and the X-ray man does not find anything there.

13. This is the mental state of sleeping sickness patients ordinarily. They can be wakened to talk and drop right off again.

DIFFERENTIAL DIAGNOSIS

As we go on the sleeping becomes more marked. In the first paragraph she had a tendency to fall asleep even while talking. In the end she falls asleep except when talking. And with the negative results of every other clue I do not know that I can make any better diagnosis than encephalitis lethargica.

The majority of cases of encephalitis lethargica show more in the spinal fluid than this. Usually there is enough meningeal irritation to give us an increase of cells, which this patient does not show. They do not say whether these cells were all lymphocytes. I presume they were. She did have a diplopia, and negatively there is nothing to rule out sleeping sickness.

What this pressure under the sternum is I have no idea. I do not see how it can be related to her death. I know no cause of pressure behind the sternum that could kill in a few weeks like this. I am inclined to think that even at necropsy we shall not know.

We have not yet gone over other causes of somnolence. I have often forgotten to consider general sepsis in these somnolent cases. How do the dates go on these leucocyte counts?

MISS PAINTER: The entrance count was 7,450, on March 20 8,550, March 22 99,550, March 24 11,350, March 25 12,350.

DR. CABOT: The sugar in the spinal fluid is normal, and that is against encephalitis. In encephalitis we have a high blood sugar ordinarily.

A PHYSICIAN: Is there anything to suggest tuberculous meningitis?

DR. CABOT: I do not see how we can rule it out. The spinal fluid is not characteristic, but it is on the border line, and I should not like to say on the spinal fluid alone that it could not be tuberculous meningitis. But I should be surprised, because of the count of ten cells. I do not remember any case of tuberculous meningitis with so few as ten cells in the spinal fluid.

A PHYSICIAN: Do you have leukopenia in the blood of tuberculosis?

DR. CABOT: There is nothing reliable about that. There are all sorts of counts, low, normal, and high. The count is absolutely unreliable in tuberculosis.

A PHYSICIAN: Was the urine examined for sugar?

MISS PAINTER: It was negative.

A PHYSICIAN: Would you get that low cell count in encephalitis?

DR. CABOT: Yes. I can not rule out encephalitis on account of the low cell count. I think it is much more against tuberculosis than against encephalitis.

Brain tumor has been suggested. Let us consider that. She has a mental state which is not like that of brain tumor. She has never had headache. The eye grounds are not characteristic. Practically every fatal case of brain tumor has changes in the eye grounds. The blood pressure is not characteristic.

A PHYSICIAN: What causes diffuse bronchitis?

DR. CABOT: Some germ on top of lowered resistance, I suppose. It is a terminal bronchitis, and I think a terminal pneumonia.

Aneurysm of course is suggested by that substernal pressure, a pressure which she comes back to at the end and we think of more. But the Wassermann was negative, and it is not a death that reminds us of rupture. Rupture death is very sudden. This is not. And the pain has been rather slight for an aneurysm so far advanced that it is near death. X-ray of the chest was probably taken. I believe routine would have included it.

A PHYSICIAN: Doesn't the breathing suggest a disturbance of the respiratory center?

DR. CABOT: Yes. I suppose it might be due to that. But when I think of that I think of an irregular breathing more than any sensation like this.

I am voting for sleeping sickness.

A PHYSICIAN: I am voting for aneurysm.

A PHYSICIAN: It says her pelvic examination shows a large cervix. Is it possible there could be malignancy there?

DR. CABOT: Not if there was a good man making the diagnosis. Thirteen thousand leucocytes is not enough to suggest anything. Of course that examining man may have been fooled, but I think we have to go on the face of the returns. At any rate she could not have died so quickly of that even with metastases.

A PHYSICIAN: Even in the mediastinum?

DR. CABOT: That is conceivable, but it would not have killed her so quickly. Again I am insisting on the time factor.

A PHYSICIAN: Meningeal hemorrhage?

DR. CABOT: Meningeal hemorrhage is a good suggestion. It is a rare disease. Very few such hemorrhages are real except from trauma. It seems clear that she had nothing more in the way of paralysis. She had questionable Babinski, some numbness in the fingers and toes, and that is all to suggest the cortex. I do not think it is meningeal hemorrhage.

A PHYSICIAN: The blood pressure is very low.

DR. CABOT: I do not think I can make anything of that. I believe it will be a normal heart

unless there is acute endocarditis. Acute endocarditis always should be borne in mind.

A PHYSICIAN: Did they do a Widal reaction?

DR. CABOT: Widal reaction I do not believe was done or there would be a record of it.

A PHYSICIAN: Did she have fever?

DR. CABOT: The chart cannot be typhoid. I will bet against it just on the chart.

A PHYSICIAN: Miliary tuberculosis?

DR. CABOT: Miliary tuberculosis is always a good thing to consider. But I do not see how we can make any such diagnosis here.

A PHYSICIAN: Did you rule out Addison's disease?

DR. CABOT: I see no considerable evidence of it.

A PHYSICIAN: How do you rule out pernicious anemia?

DR. CABOT: By the blood count. Septicemia I cannot rule out. It is a low white count for that, and we have no suggestion of a focus. But then we do not always get a focus. I cannot rule out malignant endocarditis, which I regard as one form of sepsis, nor a sepsis without endocarditis, confined to the blood stream. They were thinking of that obviously. They noticed that her murmur was plainer at the end than at the beginning. But again we have no emboli that we can put our fingers on, we have no positive blood culture, and nobody can make a diagnosis without emboli or a blood culture.

A PHYSICIAN: Could this be pituitary disease?

DR. CABOT: What suggests it?

A PHYSICIAN: Something at the base of the brain?

DR. CABOT: I do not see anything to suggest it. It often has terrific headaches, changes in the body growth and in vision.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Encephalitis lethargica.
Diffuse bronchitis.
Bronchopneumonia.

DR. RICHARD C. CABOT'S DIAGNOSIS

Encephalitis lethargica.
Diffuse bronchitis.
Terminal pneumonia.

ANATOMICAL DIAGNOSIS

1. *Primary fatal lesion*

Encephalitis lethargica.

2. *Secondary or terminal lesions*

Purulent bronchitis.
Bronchopneumonia.
Slight chronic endocarditis of the aortic valve.
Slight hypertrophy and dilatation of the heart.
Soft hyperplastic spleen.

3. *Historical landmarks*

Chronic pleuritis.
Chronic perihepatitis and perisplenitis.

DR. RICHARDSON: On opening the head we found a wet pia, with the vessels of Willis, sinuses, middle ears, pineal and pituitary glands negative. The brain weighed 1215 grams. That is a fair weight. The tissue was rather wet, but years ago I should have gone right by that brain and said it was negative. But now we cut a piece and examine it microscopically. This case illustrates it very well. In the cases that are well marked we find scattered along the brain stem—I mean by that the medulla, pons, the aqueduct of Sylvius and the basal ganglia—small, irregular, pale pinkish to reddish blotchy areas. Those after dipping into formalin stand out clearer. In some cases there is considerable injection of the vessels of Willis and their branches, and in a few cases there have been associated hemorrhages, one or two of which I remember very well where there was quite a massive hemorrhage, and after working over them for some time we came to the conclusion that it was hemorrhage associated with encephalitis lethargica. The examination of those small areas in the tissue shows about the vessels what is called perivascular infiltration. The cells are mononuclear cells. In addition there is an infiltration of the brain tissue by these cells. The question of the degeneration of the nerve cells is not so clear. Some think that it occurs; others do not. We have not been able in cases examined here to demonstrate clearly that there was any definite degeneration in the nerve cells. Sometimes these lesions are in the cord, but more often along the brain stem and in the basal ganglia. In this case besides the brain stem there were a few areas in the basal ganglia and there was probably a little more injection of the pial vessels than usual.

The skin was pale and sallow. The trachea and bronchi showed a definite purulent bronchitis, and scattered in the lungs in the region of the lower lobes there were numerous areas of bronchopneumonia, terminal.

The heart weighed 315 grams. That for her was slightly enlarged. The myocardium was negative and the valves negative with the exception of the aortic, which showed a moderate amount of chronic endocarditis.

DR. CABOT: Do you think the function of the valve was interfered with?

DR. RICHARDSON: Somewhat, possibly. The aorta and great branches were frankly negative.

The spleen was slightly enlarged and a little soft, the enlargement possibly associated with the terminal infection, or possibly associated with the unknown infection causing encephalitis lethargica. The organism so far as I am

aware is unknown. There have been many suggested.

The kidneys weighed 370 grams, good kidneys macroscopically and microscopically. Microscopic examination of the liver showed nothing. Culture from the heart blood yielded no growth.

A PHYSICIAN: Had this woman had "'flu"?

DR. CABOT: We have no record of it here. It is a poor history, and "'flu" might have been overlooked. The question brings out the point that all of us have noticed,—that most of the epidemics of encephalitis have followed epidemics of influenza. If we knew what influenza is we might know more about this sequence. Unfortunately we do not.

The pneumonia as we anticipated was a terminal affair. To me it still remains a mystery why there was this sensation of oppression under the sternum. Could the aortic disease have produced that? I do not think so, with so little hypertrophy, with no evidence of passive congestion. It seems to me that we cannot link her sensation of oppression with the disease of the aortic valve. That remains therefore to me a mystery, which is what I believe we find one or more of in every case that we have carefully analyzed.

A PHYSICIAN: I have had pneumonia three times. Most of my pain was right over the aortic region. There was a terrific oppression with it.

DR. CABOT: Was the pneumonia in the upper part?

A PHYSICIAN: No.

DR. CABOT: That is a good point. The substernal oppression may have been due to the tracheitis and bronchitis associated with pneumonia.

A PHYSICIAN: What is the Smith stain?

DR. CABOT: Dr. Steele can tell us.

DR. ALBERT E. STEELE: It is a Gram stain followed by eosin and methylene blue. The Gram stain stains the Gram-positive organisms, and the methylene blue stains the Gram-negative organisms. The capsules around the pneumococcus and other encapsulated organisms are shown by this stain. It is rather superior to the ordinary Gram stain.

DR. CABOT: Dr. William H. Smith has been interested for years in the staining of capsulated organisms, and that is one of the features this brings out.

A PHYSICIAN: Could there have been an internal hydrocephalus here?

DR. CABOT: I have never heard of hydrocephalus, blocked ventricles, in encephalitis.

Encephalitis is the only disease of importance that has come up during my lifetime. I am perfectly sure there were no cases in this vicinity in the early years of my practice, and now it is not infrequent. I think it is one of the worst diseases that I have ever had anything to do with. When I see patients with this disease I hope they will die, because if they do not they will almost always have apparent convalescence going on to one or another type of insanity or feeble-mindedness or paralysis,—a miserable life. And there is nothing on earth we can do for them. I do not know a disease that seems to me to have a worse outlook. They seem to get well, but the more cases we follow the worse the prognosis gets.

CASE 12322

A SUCCESSFULLY TREATED HEART LESION

MEDICAL DEPARTMENT

A fifteen-year-old schoolboy came to the Out-Patient Department March 6 complaining of pain in the front of the chest on both sides, lasting two days, five months before the visit. A week after it he had headache for half a day. His physician put him to bed for three weeks. He then went to school for two weeks, then by the advice of his physician stayed away from school and loafed about for the four months' interval.

December 18 he was sent as a private patient for X-ray examination in this hospital. The diaphragm was seen in the usual position and moved normally with respiration. The costophrenic sinuses were clear. There was some increase in the size of the hilus shadows with a few dense calcified glands in this region. The lung markings throughout both chests were rather prominent. The heart shadow showed a definite variation from the normal. It was increased in size and abnormal in shape. The shadow of the left ventricle was particularly prominent.

He had had mumps, measles and whooping cough. Ten years before admission he had tonsillectomy and adenoidectomy. He had occasional headaches.

His family history was negative except that one grandfather died of rheumatic fever.

Examination showed a well nourished, healthy looking boy with some lordosis. The tonsils were enlarged. The lungs were resonant and clear. The apex impulse of the heart was in the fifth space 7½ centimeters to the left of midsternum, coinciding with the midclavicular line. There was a systolic murmur at the pulmonic area and at the apex. The liver was palpable. There was right inguinal hernia. The knee-jerks were active. The pupils reacted to light and distance. The extremities showed no edema.

A seven-foot X-ray plate taken March 9 confirmed the previous examination. The heart shadow was enlarged in all diameters and had the characteristic mitral shape.

March 18 he was seen in the Cardiac Clinic.

He now gave a history of a temperature of 101° and headache the day before his first attack of chest pain, the October before his first visit. His afternoon temperature had ranged from 99.1° to 100° ever since the first attack. The heart showed no murmurs except a functional pulmonic in the recumbent position. There was normal rhythm. There was no definite enlargement on physical examination.

Discussion

BY RALPH W. MC ALLESTER, M.D.

The boy was sent home and put to bed, and has not been to the hospital since until this morning. The following additional information was obtained.

The patient had always had frequent head colds, preceded by dry throat, never any definite attacks of tonsillitis. The pain experienced at the onset, eight months ago, was severe, aggravated by moving and in taking a deep breath, and lasted for two days. Since then he has looked well and felt perfectly well, except that after coasting in February he had a slight recurrence of the chest pain. This lasted for one day.

Again in April he had a slight pain in the midsternal region, of short duration. This bothered only while moving about and after leaning forward. On April 30 he had his tonsils and adenoids removed. The tonsils were large and soft, with expressible exudate. The adenoid was moderate in size. He ran a slightly higher temperature for the week following the operation.

The physician who first saw him did not find any friction rub. Several urine examinations have been normal.

He visited the Cardiac Clinic this morning. His temperature was 100°, pulse 96, white count 12,200. In March the white count was under 8,000. He had been in bed nearly all the time in the past two and a half months, except that on June 17 he was up a bit. He feels very well, and has no symptoms at all. He has run a little afternoon temperature, 98.9° to 99.4° during the past week. Dr. Paul D. White made the following notes at the Clinic: He was well developed and nourished, looked well. The apex of the heart and the left border of dullness were eight centimeters to the left of the midsternal line, one centimeter beyond the midclavicular line. The sounds were normal, regular. No murmurs. The liver and spleen were not felt.

He was advised to continue in bed until he had been a week fever-free.

The sudden onset with pain in the front of the chest, the fever, 101° at the time of onset, and the continued evening fever ever since, the enlargement of the heart, made it seem probable that he had rheumatic heart disease, and that diagnosis was made provisionally with a question of pericarditis, also chronic tonsillitis.

There was no sufficient evidence of mitral stenosis. At the first examination in the Out-Patient Department he showed a mitral systolic as well as a pulmonary systolic, but not enough evidence was found to make a diagnosis of an endocarditis.

The X-ray shows enlargement in all diameters, especially in the region of the left ventricle, and it was said to be a typical mitral X-ray finding. The other evidence shown by X-ray was some increase in the hilum shadow and a few calcified glands in the hilus region. The lung markings throughout both chests were rather prominent. The prominence of the lung markings and the palpable liver at the time of first examination would suggest passive congestion.

The X-ray taken when the boy was first sent in for X-ray examination was essentially the same as the later one.

The treatment is rest in bed until after the temperature has been normal for a week, and salicylates.

On the whole he has run a slightly lower temperature since his tonsillectomy.

Dr. Henry C. Marble: Do you think they got all the tonsils this time? They did not ten years ago.

Dr. McAllester: I think so.

Dr. G. Colket Caner: He did not really look sick enough to-day to make one consider the question of subacute bacterial endocarditis.

Dr. McAllester: He did not look sick enough. There were no emboli, and he has not run a septic course,—no chills, sweats or drowsiness. He has not developed a secondary anemia or nephritis. He had the focus in the tonsils which would be suggestive of rheumatic heart disease. He had no murmurs that suggested endocarditis, and he has felt perfectly well and maintained his body weight throughout. His only complaint is that he wants to get up and out.

X-ray interpretations

December 18. The findings are those of mitral disease.

Diagnosis

Rheumatic heart disease.
Possible pericarditis.

CASE 12323

A CASE OF LEIOMYOSARCOMA AND THE RESULTS OF X-RAY TREATMENT

Surgical Department

A married Canadian woman forty years old entered January 22 1925 complaining of pain in the right lower quadrant of nine months'

duration and excessive flowing for a year.

In December 1924 her menstruation started a week after it was due and was unusually profuse, was accompanied by large and small clots and was more painful than formerly. Menstruation of the same character recurred every three weeks accompanied by bearing down pains especially marked in the right lower quadrant until April, when her physician put her to bed. After she had been in bed eight days a pedunculated tumor was observed in the vagina. After repeated attempts by her doctor it was removed at a hospital. After the operation her first two or three menstrual periods occurred at twenty-eight day intervals and were less profuse and painful, though they lasted nine days. There were fewer clots. Then the excessive flowing, clots and pain recurred. The pain was now more lancinating, radiated to the lower midabdominal region and usually occurred on the second and third days. In September she began to have slight flowing between the periods. For the three months before entering the hospital she had almost continual flowing, passing small clots occasionally with pain. She had no other symptoms. Since April 1924 she had gained thirty pounds.

Her first husband died of pulmonary hemorrhage after ten years of married life. Her second husband had had pulmonary tuberculosis since their marriage thirteen years ago. He was now an "arrested case". She had five miscarriages during the second marriage.

Vaginal examination showed a pink discharge from the introitus. The cervix was large, with a longitudinal midline tear of the posterior lip extending to the vaginal wall. The cervix was soft except for parts of this laceration which felt hard but not nodular. There was some pouting and erosion of the cervical mucosa, which bled easily. The cervix was freely movable. The fundus was felt bimanually, not much enlarged. No definite irregularity of contour was demonstrated. The vaults were clear.

January 24 operation was done. The mass was found to consist of a few small fibroids in rather a soft uterus and one large fibroid two and a half or three inches in diameter in the posterior wall of the cervix extending from the internal os downward along the vaginal wall. There was a thin layer of uterine tissue over this. There was considerable oozing from the cavity from which this tumor was removed. The stomach, duodenum and gall-bladder were normal. The pathological report was as follows:

"An entire uterus about the size of a grapefruit, with adnexa separate, consisting of two oviducts and one ovary. On section there is a lobulated tumor mass about the size of an orange which fills the cavity. Its surface is intimately blended with the underlying uterine wall and shows a rather soft white translucent appearance. The surrounding endometrium is smooth and pale. The oviducts are covered with an inflammatory membrane and one is firmly united to an ovary which on section contains a number of small cysts.

"Microscopic examination of the tumor shows a rich cellular growth of atypical spindle cells arranged in bundles. They show considerable variation in their size and staining reaction. There are occasional mitotic figures. Leiomyosarcoma. Chronic salpingitis."

The patient made a good recovery from the operation, by January 26 was comfortable and by February 1 afebrile. February 7 she was discharged.

July 15 1925 she reported at the Tumor Clinic in good health, with no pain and no loss of weight. Vaginal examination showed a tender mass the size of an ovary in the left vault. The right vault was negative. It was decided not to begin X-ray treatment, but to take X-rays of the chest from time to time and to have the patient report in three months to the Tumor Clinic. X-ray of the chest on this day showed both lung fields clear; no evidence of metastases. She did well and gained weight until the end of the year. X-ray of the chest January 16 again showed no definite pathology in the lungs.

About the first of March 1926 she had an attack of pain and bleeding similar to the one described below which brought her back to the hospital three months later. April 17 there was a hard irregular mass in the vagina corresponding to the position of the cervix, somewhat fixed. On inspection the cervix was not recognizable. There was a small nodule on the right side, possibly representing an atrophied cervix. May 22 she was having pain in the pelvis. The mass in the vagina was increased in size, and ran through and across the vagina. By rectum a mass as large as a hen's egg was felt in the left vault. Deep X-ray therapy was advised, and was begun May 26. Six treatments were given to June 7. She had some Roentgen sickness in the form of nausea or vomiting after three of the treatments.

On returning home June 7 she immediately began to feel very ill and had severe pain in the stomach, worse in the left lower quadrant, with chills, fever and profuse watery diarrhea. She saw blood and very dark stools. She had nausea and vomiting and some frequency and dysuria.

June 9 she was readmitted to the wards.

On examination she was described as a "thin, anemic, feverish old woman." The heart action was weak. The apex impulse and percussion measurements are not recorded, but the heart was said not to be enlarged. There were no murmurs. The blood pressure was 92/70. The artery walls were normal. There was tenderness all over the abdomen, most marked in the left lower quadrant. Most of the abdomen was soft, but there was a distinct resistance in the left lower quadrant. On pelvic examination no

landmarks were made out. On rectal examination a mass, extremely tender, could be felt filling the pelvis.

Before operation the urine was negative, the leucocyte count 36,000, the temperature 104° by rectum.

Operation was done the day of admission. The next day the temperature was down to 101.1°, the pulse 122. The patient seemed brighter. There was some foul drainage, decreasing in amount. June 22 she was discharged somewhat relieved.

Discussion

BY JOE VINCENT MEIGS, M.D.

This is interesting, because I have seen two other cases of pedunculated tumors removed in people of this age—forty—which have proved to be leiomyosarcoma, and the patients died very soon after the operations. I think that pedunculated tumors of the endometrium in women of forty are more serious than we usually think, and they are likely to be very malignant.

There is nothing very important in the history, and the examination was almost negative except for the pink discharge from the cervix. Whenever we see a pink discharge from the cervix, especially when we are looking through the speculum, it probably means that there is malignancy present. A pink watery discharge is more diagnostic than blood.

The soft uterus is important, because fibroids that are soft are the ones that are likely to be leiomyosarcoma.

This was a perfectly uneventful operation and convalescence except for the pathology.

The frequency of myosarcoma is in great question at the present time. Some authorities quote it at two or three times the frequency which other authors report. I think probably it is one half of one per cent. or even less. They are very malignant tumors.

Since leiomyosarcoma frequently metastasizes to the chest we had X-rays taken of the chest while the patient was in the Tumor Clinic. They were negative. There was nothing to treat at the time she first came to the Tumor Clinic.

In March we considered that she had had a recurrence of the tumor. We decided to try X-ray treatment, although we had not much faith in it. The patient had six X-ray treatments. The first twelve hours after the sixth treatment she had constipation, the next twelve diarrhea with blood in the stools. In the Emergency Ward she was extremely tender all over the pelvis, and there was a tumor as large as a baby's head which felt like a full bladder. She was catheterized and there was nothing in the bladder. It was felt that she probably had pelvic abscess of unexplained origin except that it might be the breaking down of the tumor from the amount of X-ray treatment which she had had.

It was decided to operate. Through the vagina the finger had to be worked through a solid mass of tumor two inches in depth until the center of the mass was reached, from which a lot of thin necrotic material escaped with a very foul odor.

The patient's tumor had grown very rapidly. She had had a considerable amount of X-ray treatment. The center of the tumor had softened and broken down.

She has done well since the abscess was opened. The discharge continues, and she will probably have tumor growing out from behind the cervix, and probably will not live much longer. But we relieved her of her pain and discomfort, and she left the hospital in fairly good condition.

There has been one other case of death reported in the X-ray Department following deep therapy, a case of Hodgkin's disease in the chest. At necropsy they found a big sloughing mass where the tumor had melted away. It is interesting to note that X-ray is a powerful agent of destruction of tumor tissue. The X-ray had not destroyed the skin in this case. It had not destroyed any tissue except the very center of the tumor, so that it must be possible to direct and use the X-ray accurately. I cannot understand why primary tumor and metastatic lesions are not completely eradicated if X-ray can break down the center of a mass in a woman's pelvis.

Dr. Jacob Fine: Did not the operation have something to do with spreading it?

Dr. Meigs: I think not. It was a clean hysterectomy without any glands or metastases or spreading of tumor tissue. The leiomyosarcoma was probably in one of the nodules.

Dr. Fine: I had a fundus once to examine. A supracervical hysterectomy was done because it was considered an intramural fibroid. I cut down on it to take a specimen. It was a well encapsulated affair. But instead of the usual appearance of a fibroid it was a red fleshy looking mass. It was a very well encapsulated tumor, and it was a surprise to the surgeon. That patient did perfectly well and is well now so far as I know.

Dr. Meigs: It is usually very malignant.

Dr. Fine: I thought perhaps the position of the sarcoma might make a difference.

Dr. Meigs: It might. I doubt if every one of these nodules in the uterus was a sarcoma; one or two probably, or it might have been in the wall of the uterus.

I think it is interesting that Roentgen rays can destroy a mass like that and melt away a tumor, and yet cancer beneath the skin cannot be cured by X-ray, or at least very seldom can be.

DIAGNOSIS

Leiomyosarcoma of the uterus.

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THE SCARCITY OF PATHOLOGISTS

IT is a strange chance that in this period of intense interest in scientific medicine there should be a scarcity of pathologists. There is a constantly growing demand for pathologists in hospitals, and even in some medical schools the department of pathology is undermanned.

Pathological interneships are sought more by men who desire this training as a foundation for the practice of medicine or surgery than by those who intend to make pathology their life work. Even among pathologists themselves there is a growing tendency to divorce pathological research—now largely conceived along the lines of physiological pathology— and what one of our leading professors has aptly termed "the practice of pathology." Yet it is to the practitioners of pathology that we must look for diagnosis of tissues and for post-mortem examinations, the ultimate checks on clinical methods.

Pathology lacks the close human contacts that attract many men to the practice of medicine, and its financial returns are small compared to those of the successful practitioner. Only by attracting early in their medical course those students that show interest in laboratory work can the ranks of the pathologists be recruited. At present the enthusiasm of these students is only too apt to be dissipated in petty "researches" and "arbeits" that are worth but little to the students themselves or to anyone else. The fundamentals are neglected as a result of the present tendency, and even though a student should decide to continue in pathology, his time has been largely wasted.

This early plunging of students into research has not even the advantages of the apprentice system, for only in the rarest instances does the student have an opportunity to learn proper methods from his teacher. Too often a false sense of facility in investigation is inculcated. Perhaps by emphasizing and presenting more attractively the fundamental aspects of pathology the present situation can be improved.

INCREASE IN RABIES

THE Department of Health of New York City reports an alarming increase in the prevalence of rabies among dogs. In the first six months of 1925 the total number of dogs examined was 152, with 25 positive for rabies; in the first six months of 1926 395 were examined with 200 positive. This is the first time in a long period that the positive examinations exceeded the negative ones. The boroughs of Queens and Richmond are reported as particularly infested with rabid dogs. The number of persons bitten by dogs has also increased from 3,049 in 1920 to 4,077 in the first six months only of 1926. So far no human deaths from rabies have been reported for 1926. One was reported in 1925.

This startling increase in rabies, which seems also to be affecting many other parts of the country, should impress us with the necessity of employing the prophylactic anti-rabic treatment whenever there is any question as to the health of the dog biting a human being. Not only should persons actually bitten take the treatment but also those who have been in intimate contact with a dog known to be rabid and have been salivated on, particularly about the head. This is especially important when open cuts or scratches in the skin are known to have been present. Detailed instructions as to how and when to use the treatment are supplied by the New York City Health Department.

The question of vaccinating dogs against rabies by a single injection has been thoroughly investigated and proven of value. Umeno and Doi in 1921 found the number of cases of dog rabies to be reduced 75% in the section of the country where they practiced it, and the disease occurred only in unvaccinated dogs. Similar results were obtained in this country by Eichorn and Lyon. As it is not known for how long vaccination is effective, it should be repeated yearly, the New York Department of Health suggesting that vaccination be made a condition of licensing.

TRAFFIC IN DIPLOMAS

DURING the investigation which led to the revocation of the Charter of the Kansas City Medical College, Judge White of the Missouri Supreme Court stated that evidence tended to show that this medical college had issued fifty or sixty diplomas to persons who had never attended the school and in one instance the person receiving a diploma had never attended any medical school.

One man reported as having paid $500 for an honorary medical degree and a Doctor of Divinity degree was sold to another person for $300.

Fortunately the Supreme Court refused to have the action transferred to Jackson County Circuit Court before a Jury, holding that a hearing relating to the right of a corporation to exist by quo warranto proceedings is not a matter for Jury consideration.

These facts are reported by the *Journal of the Missouri State Medical Association.*

THE CANCER GERM AND ITS CULTURE

M. J. SCOTT, M.D., who appends the title of F.A.C.S. to his name, has sent circulars describing the medium on which he claims the cancer organism can be isolated and cultured.

Careful reading of this circular dispels the first suspicion that it was put out as a joke.

Since Dr. Scott is a Fellow of the American College of Surgeons, and the principles of this organization demand ethical behavior, Dr. Scott should be required to demonstrate the organism of cancer, acknowledge his failure to prove the existence of this agent, or retire from the ranks of the College.

When a man advertises himself as a member of an organization of this type and claims to know more than the acknowledged authorities in Science without submitting proof, he should be driven from association with those who stand for scientific honesty.

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

ALLEN, ARTHUR W., A.B.; M.D. Johns Hopkins University Medical Department 1913; F.A.C.S.; Instructor in Surgery ,Harvard Medical School; Surgeon, Out-Patient Department, Massachusetts General Hospital. His subject is "The Management of the More Common Fractures," page 299. Address: 99 Commonwealth Ave., Boston.

ARMSTRONG, DONALD B., Ph.B.; M.S.; M.D. College of Physicians and Surgeons, New York; Assistant Secretary, Metropolitan Life Insurance Co. Formerly Executive Officer, Framingham Tuberculosis Demonstration, Secretary to the Technical Board of the Milbank Memorial Trust. Lecturer and author. His subject is "Health Advice: What Does the Public Want and Need?" page 305. Address 1 Madison Avenue, N. Y. City.

VIETS, HENRY R., B.S.; M.D. Harvard Medical School 1916; Assistant Neurologist, Massachusetts General Hospital; Instructor in Neurology, Harvard Medical School; Member American Neurological Association, Boston Society of Psychiatry and Neurology, etc. His subject is "Some Notes on the Treatment of the Insane," page 310. Address: 14 Charlesgate West, Boston.

CLARK, L. PIERCE, M.D., N. Y. University Medical College 1892; Consulting Neurologist to Manhattan State Hospital, Craig Colony for Epileptics and Visiting Neurologist to Randalls Island Hospital and School for Defective Children. His subject is "Dietetic Treatment for Epileptics," page 311. Address: 2 E. 65th St., N. Y. City.

SAWYER, EDWARD J., M.D. Tufts College Medical School 1918; Surgeon to Arlington Mills Clinic, Lawrence, Mass. His subject is "Aluminum and Potassium Nitrate Poultice," page 314. Address: 42 Salem St., Andover, Mass.

HUBER, EDWARD G.—Continued paper on "The Control of Communicable Diseases in Massachusetts," page 315. Personal reference may be found on page 291, Volume 195.

The Massachusetts Medical Society

MEMBERSHIP CHANGES

FROM JULY 1 TO AUGUST 1, 1926

NOTE:—The deaths have appeared in the columns of the JOURNAL, as reported.

WALTER L. BURRAGE, *Secretary.*

Adams, John G., Salem, has moved to 354 Essex Street.
Adelstein, Leo J., from Palmer (Hampden) to Los Angeles, Calif. (Non-Resident List), Los Angeles General Hospital.
Bakst, Jacob B., from Fall River (Bristol South) to Lawrence (Essex North), 72 Juniper Street.
Cahill, John Thomas, Lawrence, 344 Haverhill Street. Restored by Council June 8, 1926.
Cobb, Gardner N., Worcester, now 36 Pleasant Street.
Cronin, Thomas J., Worcester, from 49 to 36 Pleasant Street.
Cummings, John J., Worcester, from 58 to 36 Pleasant Street.
Cunningham, Allan R., Winchester, has moved from 31 to 76 Church St.
Dodd, Katherine, has moved from Worcester (Worcester) to Nashville, Tenn., Vanderbilt Hospital.
Felton, Lester M., Worcester, from 33 to 36 Pleasant Street.
Gardner, Stuart N., has moved from Peabody to Salem. Office, as before, at 31 Chestnut Street.
Gates, E. A., Springfield, now 2345 Main Street.

Hart, Francis D., Worcester, now 36 Pleasant Street.
Holzer, William F., Worcester, has moved from 28 to 36 Pleasant Street.
Hutchinson, Claribel M., Honolulu, now at 1134 Miller Street.
Jordan, Michael M., Worcester, now 36 Pleasant Street.
Kaufman, Morris F., Worcester, has moved his office from 97 Grafton to 37 Providence Street.
Kingsbury, Curtis B., has moved from New Bedford (Bristol South) to Taunton (Bristol North), 119 Weir Street.
Leland, Leslie P., Worcester, from 238 Lincoln to 36 Pleasant Street.
Lewis, S. A., Springfield, now 2335 Main Street.
Lincoln, George C., Worcester, has moved from 3 Irving Street to 36 Pleasant Street.
Ljungberg, David G., Worcester, from 29 Pearl Street to 36 Pleasant Street.
Mantione, Rosario L., of Pittston, Pa., is now at the Postoffice Building, Water Street.
Mella, Hugo, from Denver, Colo., to New York City, the Bronx, United States Veterans Hospital.
Morse, Fred Harris, of Jamaica Plain, has moved his Boston office from 462 to 711 Boylston Street.
Pachanian, S. K., Worcester, now 216 Main Street.
Parsons, A. W., from Kerrville, Texas, to San Antonio, Texas, General Delivery.
Reddy, Joseph W., has moved from North Reading (Middlesex East) to Westfield (Hampden), Westfield State Sanatorium.
Regan, James J., of South Boston, has moved his Boston office from 419 Boylston Street to 520 Commonwealth Avenue.
Rice, Florence F., from Medford to Cambridge, 63 Dana Street.
Salls, Frederick H., from Hopedale to North Grafton, State Hospital.
Smith, Ernest E., Worcester, from 28 to 36 Pleasant Street.
Walker, Lewis M., from Little Rock, Ark., to Augusta, Ga., United States Veterans Hospital.
Williams, Carl A., of St. Petersburg, Fla., has moved his office to 714-715 Power and Light Building.
Vaughan, H. G., Attleborough, now 25½ Peck Street.
Voorhis, Kathalyn, of Worcester, has moved from 28 to 36 Pleasant Street.
Youngberg, Paul P., has moved from Worcester (Worcester) to Rock Island, Ill. (Non-Resident List), 3904 Seventh Avenue.

MISCELLANY

TWO MEDICAL FRAUDS STOPPED

THE Post-Office Department has recently issued fraud orders affecting the advertising of Silph Reducing Gum and San-Gri-Na, both of which were running display advertising in local papers.

San-Gri-Na is a product put out by the Scientific Research Laboratories, New York City, under representations that it has reduced most obstinate cases of obesity. Among the advertising claims were "Fat Woman Loses 63 lbs. with San-Gri-Na." The advertising said it was not necessary to diet or exercise. When the stuff was bought, however, the purchaser found that in addition to San-Gri-Na, she should take the juice of one lemon in a glass of warm water every morning, chew her food very thoroughly, eat only two or three light meals a day, sleep not more than six or seven hours, do a reasonable amount of walking, take no liquid with meals, avoid starches, fat and candy.

The Silph Reducing Gum is put out by the Sylph Co., New York City. Advertising claims for this product were that this chewing gum safely takes off fat at the rate of several pounds a week. Some of the statements made were "Chew Silph and be Sylph-Like," "Everyone is Chewing It and Pounds of Fat are Rolling Off," "To Chew Silph Not Only Means to be Sylph-Like, but to be Strong, Well, and Slender."—*Boston Better Business Bureau.*

WHAT WEALTH IS DOING TO AID SCIENCE

Hospital Progress states that the Rockefeller Foundation, the Carnegie Foundation, the Millbank Funds and the Commonwealth Fund all together contributed more than $13,000,000 for disease prevention and health promotion in 1925. If to this stupendous sum the gifts to hospitals and other agencies concerned in treating the sick and promoting health could be compiled, an impressive demonstration of the interest in scientific medicine would be recorded.

The ambitions of the cults and quacks cannot forever prevail in the presence of these endorsements. Somebody will before long contrast the scientific achievements in dealing with the real needs of humanity with those of the pseudo-scientists and when that shall have been set forth in plain but impressive words, fewer people will respond to the advertisements of cureall and fakirs.

TEN DEATHS AN HOUR

C. B. SCOTT, President of the National Safety Council of Chicago, is responsible for the statement that ten lives are lost in America every hour through accident. Every accident is due to a certain definite specific cause such as carelessness, recklessness, thoughtlessness, ignorance or parsimoniousness, this man claims.

The cost of accidents in this country amounts to $5,000,000,000 annually. About eighty-five thousand persons are killed and somewhere between five and ten million persons are injured.

In accidents, as well as homicides, America leads England and Wales by double the fatality rate.

CONSCIENTIOUS OBJECTOR PAID THE PRICE

ACCORDING to Dr. Matthias Nicoll, Jr., State Commissioner of Health, forty-three cases of smallpox occurred in New York State last month and further reports of additional cases have been received since then. This statement was made in a health talk broadcast from Station WGY recently.

"A young man recently became ill with small-

pox. All members of his family were immediately vaccinated with the exception of an elder brother, who refused on the ground that he was in perfect health and didn't believe that vaccination prevented smallpox. He was told that while he had a perfect right to his opinions he had been in contact with a case of smallpox and must, therefore, in accordance with the provisions of the Sanitary Code, either be vaccinated or be quarantined for a period of at least twenty days. The elder brother had the courage of his convictions and chose the latter alternative, though only after vigorous protest.

"The controversy aroused a great deal of interest in the village and town where this 'conscientious objector' lived and he had many sympathizers, especially as time went on and he remained apparently well. Before the twenty days were up, however, this non-believer in vaccination was taken ill and within a few days developed a typical case of smallpox with pustules covering the entire face, which became so greatly swollen that his eyes were nearly closed. It was one of the most severe cases seen in this State for some time. All of the other members of this family who were promptly vaccinated after exposure to the first case of smallpox escaped the disease."—*New York Times.*

THE ADAMS NERVINE

THE forty-ninth annual report of this institution giving the record of its work for the past year has been published. The resident physician gives in a few words a statement of the important activities as follows:

There were 155 admissions. Two of these declined to remain for treatment. One hundred and fifty-six were discharged, of which four were recovered and one hundred and one were relieved. There were forty-eight discharged who were not relieved while here, but many of them received advice as to the future, and several were sent from here to other hospitals. There was one death. Of the 155 admitted, twenty-three were given free beds upon admission. To maintain the quota of free patients, eight of those who agreed to pay on entrance were given a free bed when the opportunity came. Twenty-four per cent. of the service rendered was free, and fifty-two per cent. was given to those who paid less than the cost to us, so that seventy-six per cent. of those under care received assistance from the fund.

During the fall of 1925 applications fell off, and for the first time in over twenty years there were no applicants on the waiting list. But this condition no longer exists, and applicants are as numerous as formerly. This brief dearth of patients caused the weekly per capita cost to rise.

The average weekly payment made by those who paid anything was $26.18. The average weekly per capita cost was $46.32.

Many have been helped by their stay here, and I wish I could tell you of the many words of appreciation of the care they received and their grateful thanks to the donor and to you who have administered the trust so liberally.

We hear much in recent years of Mental Hygiene. It is not always recognized that for many years the Adams Nervine has been giving a course in Mental Hygiene. This part of the work has been most beneficial to the patients and is most stimulating to the staff.

Our Occupation Room, which by the way is one of the oldest schools of occupational therapy in Massachusetts, continues its usefulness. During the year 124 persons spent 4,569 hours there. This is distinctly a remedial feature. Many beautiful things have been created there. The satisfaction the patients obtain in finding they have made something beautiful that is worth preserving is a powerful stimulant. It gives them a new confidence in themselves.

Automatic sprinklers have been placed in the corridors. Otherwise no unusual repairs or alterations have been called for. There have been fewer changes than usual in the staff of employees.

CORRESPONDENCE

NOTES FROM THE NATIONAL CAPITAL

(From Our Washington Correspondent)

CONGRESS ADJOURNS

The first session of the Sixty-ninth Congress adjourned on July 3. Political observers seem to feel that this Congress was more notable for what it did not do than for its accomplishments; whether this stricture is true or not with respect to general legislation, it is certainly true as regards matters of interest to medicine and public health. All bills not acted upon go over, however, to the second session, which convenes the first Monday of next December and terminates on March 4. In this short session it is not likely that a tremendous amount of attention will be given to legislation of significance to national vitality; in fact, that kind of legislation seldom does receive a great deal of consideration.

MEDICAL LEGISLATION BEFORE CONGRESS

Of about 20,000 bills and resolutions introduced in both branches of the Sixty-ninth Congress, approximately 100 had to do with public health and medical matters. Many of these measures were of local interest, however, such as the numerous bills for veterans' hospitals in various favored communities, none of which passed. Among the really important bills were those for the correlation of all Federal health activities, the control of narcotics, the extension of the Federal maternity and infancy act, the control of oil pollution, the regulation of imported milk, the control of lye and other dangerous caustics in interstate commerce, and various amendments to the pure food laws. Other matters of perhaps slightly less importance were measures to prohibit vivisection, to promote rural health, to regulate the practice of chiropractic in the District of Columbia, to provide a system of school hygiene in

the District, and to regulate traffic in clinical thermometers.

Although some of these bills made progress, none was enacted into law. In spite of the opposition expressed by representatives of Massachusetts dairy interests, the bill for the regulation of imported milk was passed by the House toward the end of the session. The bill for extending the provisions of the Federal maternity and infancy act for a two-year period, which passed the House in April, did not get to a vote in the Senate. The bill came up at the night session on July first, but was passed over at the request of several Senators. Senator Sheppard, one of the authors of the original measure, inserted in the *Congressional Record* on that date a statement in reply to one previously put in the record by Senator Bingham of Connecticut entitled "Save the Babies by Rejecting the Maternity Act." Senator Sheppard had also put in the record on June 23 an indorsement of this bill from Dr. Charles H. Mayo. The bill to license chiropractors in the District of Columbia was favorably reported in the Senate on June 26, regardless of the opposition of the local medical profession, and a bill for a division of safety in the Bureau of Labor Statistics was also favorably reported on the 24th.

NEW LEGISLATION OF INTEREST TO PHYSICIANS

Artificial limbs would be furnished to government employees injured in the course of their employment, according to S. 3545, which passed the House on June 21. This measure overrules a ruling of the Comptroller-General. It would be administered by the United States Employees' Compensation Commission.

A Federal board of alienists would be created by a bill (H. R. 12954) introduced on June 21 by Representative Black of New York. He would have a board of twenty physicians, who would "make a comprehensive study of mental diseases and treatments, diagnose and prescribe for mentally deranged veterans, and prepare a code of ethics to govern the appearance of alienists as expert witnesses at trials."

Members of Congress would be measured in accordance with anthropological and "psycho-physical" principles if Senate Resolution 255 should be adopted. This resolution authorizes the employment of Arthur McDonald at a salary not to exceed $2000 a year to perform this unique and interesting research.

A National Institute of Health is proposed in a bill (S. 4540) introduced on July first by Senator Ransdell, who would also authorize by it increased appropriations for the hygienic laboratory and would sanction the acceptance by the government of donations for use in ascertaining the cause, prevention, and cure of diseases affecting human beings. The bill was referred to the Committee on Appropriations of the Senate.

DEXTROSE VERSUS SUCROSE

The Senate spent much time during the latter part of the session debating a bill (S. 481) to amend the pure food law so that food products should not be regarded as misbranded because of having been preserved or sweetened with corn sugar (dextrose) or fruit sugar (levulose) instead of cane sugar (sucrose). This bill passed the Senate in January and was later passed with amendments by the House. Dr. Harvey W. Wiley, well known protagonist of pure food, has opposed the measure most violently, though according to Senator Copeland (*Congressional Record*, page 12497) Dr. Wiley is taking his stand in opposition to the entire chemical and medical profession of the United States. His position seems to have made an impression on some Senators, however, for Senator Neely, in the course of remarks which proponents of this measure charged were for dilatory purposes, said: "I must decline even to try to harmonize the conflicting opinions of the American medical profession. However, as between Doctor Wiley and those who disagree with him about corn sugar, I stand or fall with the doctor."

MISCELLANEOUS ITEMS

The United States Children's Bureau has issued a pamphlet entitled "The Children's Bureau of the Department of Labor: What It Is and What It Does." An impartial description of this bureau is given in one of the monographs of the Institute for Government Research of Washington, D. C. This organization also has a monograph on the Public Health Service.

All Federal prisoners will hereafter be given the Wassermann test as a routine measure, according to an announcement of the Department of Justice issued on June 24.

Chiggers are to be investigated this summer under the auspices of the United States Bureau of Entomology and an endeavor will be made to ascertain whether the chiggers which attack snakes, rabbits and birds are the same which pester humans. Chigger eggs are to be sought, though since they have never previously been discovered, it is not known whether these insects have eggs.

Patients in mental disease institutions numbered 123,880 in 23 States on March 31, according to studies announced by the Public Health Service on June 15. This compilation is said to be the first ever undertaken by the Service.

DR. BERNARD W. CAREY RECOGNIZED

New York, August 3, 1926.

Editor, Boston Medical and Surgical Journal:

We wish to call to your attention the fact that Dr. Bernard W. Carey, Director of the Commonwealth Fund Child Health Demonstration in Athens, Ga., has recently been awarded the honorary degree of Doctor of Public Health by the University of Georgia. The degree was given in recognition of Dr. Carey's services in promoting child health in Georgia.

We are forwarding you this information in the hope that you may use it in the personal columns of your magazine.

Very truly yours,

E. A. WINSLOW,
Publicity and Research Secretary,
Child Health Demonstration Committee.

VACCINATION AND ITS OPPONENTS

Mr. Editor:

It needed no vote from the Staff of Union Hospital to convince me that the physicians of Fall River were sound on the question of vaccination, compulsory vaccination and vaccination of children in all schools, public and private.

It was not I who loudly declared that a number of medical men supported Dr. Padelford in his campaign to break down our present laws and prevent their extension.

This statement was made by Representative Ashton, who in no uncertain terms declined to give me the names he so vociferously shouted to his fellow legislators. Whether among them are those of Staff members of the Union Hospital can only be ascertained by conference with Dr. Padelford, who does not deny furnishing them to Mr. Ashton.

Dr. Padelford refuses to give them to *me*, informing me also that many are with him who would not care to have their names mentioned and where prominence would, if known, surprise me.

Whether this modest reticence (names having been given where no public record is kept) is "playing the game" I leave to his fellow practitioners in Fall River to decide.

They must also decide their attitude toward such general and unsupported accusations and again what measure of support they may wish to give Mr. Ashton in any candidacy for re-election to the position he now holds in the Great and General Court.

Who steals my purse steals trash, but he who filches from me my good name—

The quotation is somewhat musty.

SAMUEL B. WOODWARD.

NEWS ITEMS

DR. KONIKOW IS STUDYING IN BERLIN—Dr. M. J. Konikow is attending the gynecological and obstetrical clinics of Professors Strassmarn and Franz at the Charité in Berlin and will return to Boston late in the autumn.

OPHTHALMOLOGICAL LABORATORY FOR HARVARD—*Science* announces the gift of $250,000 to Harvard University toward the foundation of an ophthalmological laboratory by Dr. Lucien Howe of Buffalo, in memory of members of his family. Dr. Howe will become director of the laboratory, which will be maintained in the Massachusetts Eye and Ear Infirmary. The laboratory is expected to cost $500,000, Dr. Howe's gift being supplemented by $175,000 from the General Education Board and $75,000 from the university. It will be used for both research and teaching, and will be known officially as the Howe Laboratory of Ophthalmology, as a memorial to Dr. Howe's father, brother and father-in-law, all of whom fought in the Civil War.

REPORTS AND NOTICES OF MEETINGS

CLINIC MEETING OF THE FLOATING HOSPITAL

"MIDSUMMER Clinic Meeting of the Boston Floating Hospital, August 18, 1926, at 4:30 P. M. Physicians, medical students, nurses and others interested are cordially invited to attend.

LAWRENCE W. SMITH, M.D.,
Chief of Staff."

BOOKS RECEIVED FOR REVIEW

Chemistry and Recent Progress in Medicine. By Julius Stieglitz. Baltimore: William Wilkins Company. 62 pages.

The Peaks of Medical History. By Charles L. Dana. New York City: Paul B. Hoeber, Inc. 105 pages. Price, $3.

A Popular Encyclopedia of Health. By Lee K. Frankel and Donald B. Armstrong. New York: Albert and Charles Boni. 366 pages. Price, $3.50.

Hydrogen Ion Concentration of the Blood in Health and Disease. By J. Harold Austin and Glenn Cullen. Baltimore: Williams & Wilkins Company. 75 pages. Price, $2.

Hay-Fever and Asthma. By Ray M. Belyeat. Philadelphia: F. A. Davis Company. 198 pages. Price, $2.

Medical Report—Harvard Institute for Tropical Biology and Medicine.

Mesenteric Vascular Occlusion. By A. J. Cokkinis. New York: William Wood & Co. 159 pages. Price, $4.

Birth Control and the State—A Plea and a Forecast. By C. P. Blacker. New York: E. P. Dutton Company. 87 pages. Price, $1.

Roentgen Interpretation—A Manual for Students and Practitioners. By George W. Holmes and Howard E. Ruggles. Philadelphia and New York: Lea & Febiger. 326 pages. Price, $5.

Local Anesthesia in Otolaryngology and Rhinology. By James Joseph King. New York: Paul B. Hoeber, Inc. 205 pages. Price, $5.

Politzer's Textbook of the Diseases of the Ear. By Milton J. Ballin. Philadelphia: Lea & Febiger. 776 pages. Price, $10.

Die Pathogenese des Chronischen Magendarmgeschwurs. By J. R. F. Rassers. Leiden: S. C. Van Doesburgh. 69 pages. Price, 4/-.

Clinical Pediatrics. By John Lovett Morse. Philadelphia and London: W. B. Saunders Company. 848 pages. Price, $9.

Fundamentals of Dermatology. By Alfred Schalek. Philadelphia and London: Lea & Febiger. 239 pages. Price, $3.

Laboratory Outlines in Bacteriology and Immunology. By John F. Norten and I. S. Falk. Chicago: University of Chicago Press. 114 pages. Price, $2.

Epilepsy—A Functional Mental Illness—Its Treatment. By R. G. Rows and W. E. Bond. New York: Paul B. Hoeber, Inc. 138 pages. Price, $3.

Clinical Examination of the Nervous System. By G. H. Monrad-Krohn. New York: Paul B. Hoeber, Inc. 201 pages. Price, $2.50.

Die Chirurgie Eine zusammanfasseide Darstellung der allgemeinen und der speziellen Chirurgie. By M. Kirschner and O. Nordmann. Berlin: Urban Schwarzenberg. 680 pages. Price, Lfg. 10; M. 21-.

Injuries of the Wrist. By Etienne Destot. New York: Paul B. Hoeber, Inc. 176 pages. Price, $6.

BOOK REVIEWS

Collected Papers of the Mayo Clinic. Volume XVI. W. B. Saunders Co. 1924.

This comprehensive collection of papers is a demonstration of the enormous field covered by the workers at the Mayo Clinic. The papers are grouped under the headings—Alimentary Tract; Urogenital Organs; Ductless Glands; Blood and Circulatory Organs; Skin and Syphilis; Head, Trunk and Extremities; Brain, Spinal Cord and Nerves; Technic; and Miscellaneous.

In view of the discussion for and agains gastro-enterostomy in the therapy of duodenal ulcer, Balfour's Paper is stimulating. He feels, as he states in his summary, that there is no conclusive evidence that any operation is more useful than gastro-enterostomy in cases of chronic duodenal ulcer. MacCarty, in the same section, reports on 425 excised duodenal ulcers, the main point of interest in his Paper being the difference in their cytologic appearance from that of gastric ulcers.

In the urogenital section, Bumpus discusses very thoroughly the methods and results of treating malignancy of the bladder. He feels that Broder's grading of malignancy constitutes a reliable and useful simplification and that the degree of malignancy of the tumor is the greatest factor in determining the final results of any treatment.

Abt's Pediatrics, Volume VIII. Edited by ISAAC A. ABT, M.D., Professor of Diseases of Children, Northwestern University Medical School, Chicago. Philadelphia and London: W. B. Saunders Company, 1926.

This eighth volume of Abt's Pediatrics, containing 1102 pages with 388 illustrations, and the separate index to the System completes the set that has been in process of publication during the past year. The edition of any such comprehensive system is indeed a monumental task, and Dr. Abt is to be congratulated on the uniform excellence of the set—a modern standard for Pediatrics.

The preceding seven volumes have been reviewed from time to time as they have appeared, and always with favorable notice. The subjects considered in this final volume are diseases of the skin, edited by Oliver S. Ormsby, M.D., with a number of contributors; ear diseases in childhood, by George E. Shambaugh; ocular diseases of infancy and childhood, by Casey A. Wood; hospitals for infants and children, by John M. Dodson and Richard E. Schmidt; medico-legal, by James P. Simonds; tumors of infancy and childhood, by Oscar I. Schultz; encephalitis, by Leslie B. Holman, and animal parasites, by Henry B. Ward.

The set is a magnum opus, holding a fitting place on the shelves of anyone treating the diseases of childhood.

The International Medical Annual of 1926. A Year Book of Treatment and Practitioners' Index. It is published by William Wood and Company of New York and the prize is $6.00.

The reviewer is much impressed by the practical value of this book. The contributors are men of the highest professional rating and the articles are sound, conservative and fair interpretations of the literature, abstracted with the purpose of being of practical value to the practising physician. The busy practitioner, whose opportunities for reading are limited, could keep very well posted indeed if he read *only* this book annually. The index, the alphabetically arranged page headings, the bold type paragraph captions, the use of italics and varying sized type for emphasis, and the concise bibliography at the end of each article make it an unusually good reference book. A multitude of illustrations, many in colors, add greatly to the value of the book. Although it is designed primarily for speedy and detailed reference work, its style is enjoyable and most readable. The following quotation taken from the introduction illustrates the sensible conservatism which permeates the entire book. ". . . . . the treatment of disease, if it is to succeed, must be based on the application of common sense, guided by a special knowledge of the problems that have to be solved. In so highly developed a task as this fight against disease there is always a great danger that special knowledge may tyrannize over common sense and fritter away the vigour of the campaign on ineffective details." This seems to be one of the few really *usable* books, and the fact that this is the forty-fourth year it has been published indicates that many others have found this to be the case.

Visual Field Studies. By RALPH I. LLOYD, M.D., F.A.C.S. Surgeon, N. Y. Ophthalmic Hospital; Ophthalmologist to the Cumberland, Carson C. Peck Memorial, & Prospect Heights Hospital, and the Brooklyn Nursery. Published by E. C. Swezey, 50 Pine St., Manhattan, N. Y. Net $6.00. A small volume of 216 pages and 124 illustrations.

The work consists of a systematic study of visual fields. First the history of the subject is taken up, then the physiological aspect and general considerations such as normal fields, blind spots, indications for field studies, apparatus, technique, etc. Next the fields in various pathological conditions are systematically taken up and discussed.

The work is a distinct contribution to the literature and goes a great way in presenting one of the most important branches of ophthalmology in a clear and concise manner.

Young's Practice of Urology. Based on a study of 12,500 cases. By HUGH H. YOUNG, M.D., and DAVID M. DAVIS, M.D., Johns Hopkins University. With the collaboration of FRANKLIN P. JOHNSON. Two volumes. 1484 pages. 1003 illustrations. W. B. Saunders Co. Price per set: Cloth $25.00 net.

In and about the year 1900 the specialty now known as Urology was practically non-existent. A few general surgeons were particularly interested in genito-urinary problems, but the specialty as we now know it had hardly begun to develop. Shortly before this period, Hugh Hampton Young began to contribute to the literature relating to genito-urinary surgery, and he has been contributing to it ever since. The results of his extensive experience he has now gathered together in Young's Practice of Urology.

These two volumes are really a remarkable compilation; they represent, to a very large degree, the contributions of one man to the science of urology. No doubt much of the work reported in their pages was not done by Young himself, but if not, it was done under his direction at the Brady Urological Institute. In consideration of this fact, it is perhaps excusable

that one is not allowed to forget the part which the author has played in the development of urology; the record is indeed one to be proud of.

The book stands out by reason of its originality. Most text books follow a certain well recognized outline; quote freely from preceding volumes, and reproduce illustrations which have become hoary with age. Young's Urology is entirely different. The arrangement of the subject matter is based upon pathology, not anatomy. Sections in Volume I, for example, are devoted to "The Obstructive Uropathy" and "Urolithiasis;" in these sections the pathology of these conditions is discussed and the treatment indicated; Volume II gives the details of the operative treatment.

In the presentation of a subject, Young omits a great deal of the classical discussion of embryology, etiology, prognosis and so forth. He strikes at once into that phase of the subject which most interests the genito-urinary surgeon, quoting cases to illustrate his point, and giving records of failures as well as of successes. Every surgeon of any experience can handle the usual case; Young brings out as well the unusual one, which is just the one we wish to read about.

Much is said, of course, about intravenous therapy, especially as regards the use of mercurochrome. Many unusual operations, such as those for relief of incontinence of urine, are described. Pathological conditions are well illustrated by original drawings by Brödel and Didusch; operations are shown in every stage, with many inserts to give the critical details that make for success.

We have never seen a text book which so lured us on from page to page, and so well repaid a careful reading.

Modern Views on Digestion and Gastric Disease. By HUGH MACLEAN, M.D., D.Sc., M.R.C.P. Professor of Medicine, University of London, and Director of the Medical Clinic, St. Thomas's Hospital; Honorary Consulting Physician to the Ministry of Pensions; Consulting Chemical Pathologist to St. Thomas's Hospital. New York: Paul B. Hoeber, Inc., 1926.

The purpose of this small book is to give a concise account of the physiology of gastric digestion so far as it has direct clinical bearings and of the methods of diagnosis of gastric disease. The treatment also is touched upon, but is given in less detail. The result is a well-planned statement of what is at present most usually accepted, written in a simple and readable manner, well adapted to the needs of students and of physicians who wish to review the subject. It is clear to any reader that what is given is written from wide experience and a wholesome practical judgment which shows itself especially in dealing with the many points which scientific controversy leaves still in doubt. The clinical facts of the author's observation are used effectively to balance questionable beliefs which have become current. On this basis, for instance, it is shown that from the clinical viewpoint cancer of the stomach is best taken as a disease which usually arises *de novo* and not as a sequel of ulcer. The laboratory examinations of gastric contents are described according to the routine usually followed. The chapter on radiological examination is illustrated by excellent plates. While the work is not one intended to introduce new methods it is perhaps of even greater value as a sound and authoritative statement of such knowledge of its subject as can be expected to be permanent.

Clinical Interpretation of the Wassermann Reaction. By ROBERT A. KILDUFFE. Philadelphia and New York: Lea & Febiger. 203 pages. Price $2.50.

The book contains 203 pages divided into 29 chapters. Its subject matter is treated under 117 headings and contains a large mass of valuable information, to which every practicing physician should have easy access. It possesses an excellent bibliography and review of the recent experimental work on syphilis, particularly as it relates to the methods of modern treatment.

There are a few typographical errors and several inaccuracies in statement. Most of the former, however, would be easily recognized in reading the text. As an example of an inaccuracy,—there occurs on page 56, under 3, "The inclusion of a serum control during the test as a means of avoiding anti-complementary reaction." What is meant by this statement is that this is a means of showing when this property would interfere with the accuracy of the test.

The chapter on "specific principles of a Wassermann reaction" is rather poorly developed to be readily intelligible to the average busy practitioner. This criticism is a specific example of the fact that seriological explanations are often given without a definition of the terms involved, which would lead to confusion among those who were not really familiar with complement fixation technique.

Throughout the text considerable stress is laid on the qualification of the serologist in charge of the work, and on the method used, special preference being given to the Kolmer technique. This preference for any given technique is still debatable. It is unquestioned that some laboraties which do not use the Kolmer modification are doing work of the highest quality. Furthermore, the author insists on an abbreviated statement of method used, together with a description of the intensity of the reaction. Particularly the latter idea is open to criticism because in most instances the clinician is rarely concerned about any other than the accuracy of the report,

and its significance,—positive, negative and doubtful are terms which indicate the laboratory's idea of the significance of its tests, this being a burden which any laboratory doing a high grade of work should assume.

The Thyroid Gland. CHARLES H. MAYO and HENRY W. PLUMMER. The C. V. Mosby Company, St. Louis.

The subject of this review is a small booklet of eighty-three pages devoted to the subject of the thyroid gland and representing annual lecture course IV of 1925 of the Beaumont Foundation under the auspices of the Wayne County Medical Society, Detroit, Michigan.

The authors of this booklet have undoubtedly had the opportunity of seeing and observing the largest group of thyroid conditions ever gotten together in the world in one clinic and the wide extent of their knowledge together with their logical speculations on the subject is ably demonstrated in these pages.

The first half of this attractive and readable little booklet by Charles H. Mayo deals interestingly with the history of the thyroid and the theories of the development of goiter.

The biologic chemistry of the thyroid and thyroxin are discussed as is also the subject of parathyroids, together with a summary of our knowledge regarding the function of these glands.

The second portion of the book, under the heading, "The Function of the Thyroid Gland" is by Henry S. Plummer. Dr. Plummer has for several years had medical charge of the large group of goiters which have gone to the Mayo Clinic, and one cannot read this section without being impressed with the speculation and study which he has given them. So much of the foundation and fundamentals of the entire thyroid subject is here presented, in a condensed form, that excerpts even to demonstrate this point would lose their significant value.

One finds here presented Dr. Plummer's theory of dysfunction of the thyroid in exophthalmic goiter in contra-distinction to hyperfunctioning adenomata: and the speculation as to an incompletely iodized thyroxin molecule being driven from the thyroid by intensive stimulation, leading to the hypothesis that the clinico-physiologic complex of exophthalmic goiter is determined by the total and relative amounts of thyroxin and an incompletely iodized thyroxin nucleus.

From the above concept of thyroid function was developed and is here presented the use of iodine, together with the scheme of administering it as employed by Dr. Plummer.

The relation of hyperthyroid states is discussed (1) following the administration of thyroid gland or thyroxin, (2) in persons having hyperfunctioning adenomatous thyroids, and (3) in persons having exophthalmic goiter.

The reviewer recommends that the book be read by everyone who is interested in the newer conceptions of thyroid disease. He recommends that he who is seriously interested in the thyroid subject realize that the knowledge available in this little booklet cannot be grasped and retained either as it is heard in the course of a lecture or read in the course of ordinary reading. He who would get the most out of these lectures must slowly read it, digest it, and apply many of the hypotheses here presented to the actual clinical thyroid problems as they have come under his own observation.

Emergency Surgery. By GEORGE DE TARNOWSKY, M.D.

This book on emergency surgery was undoubtedly inspired by the World War. Many surgeons have realized the necessity of correlating our war experiences and adapting them to civil practice. The author was exceptionally well equipped for this work and has accomplished it splendidly. It is not a military surgery in any sense of the word, but one which will be the hand-book of men doing industrial and other acute civil practice. The text is concise without sacrificing the scientific side of the subject, well illustrated and contains many original ideas of the author.

The chapters on industrial surgery are particularly good. Little has been written on this subject up to date, and this branch of surgery is rapidly developing a very important role. Excellent advice is given on court testimony in medico-legal cases. The relationship of industrial accident boards to the injured and to the surgeon will be found helpful to all interested in this subject. The chapters on fractures and dislocations, although setting forth ideal methods of treatment, are aimed at simplicity and standardization.

Blood Chemistry. Colorimetric Methods. By WILLARD J. STONE.

In this edition one finds a clear and logical description of the principal methods now in use in studies of blood chemistry. It should be particularly valuable to the internist who desires to run his own laboratory. No attempt is made to give the various more detailed theoretical considerations as regards the tests but a rather complete bibliography is found at the end of each chapter, so that one may find ready reference to any of the subjects discussed, if he wishes to go deeper in the matter. Of particular interest are the sections on the clinical aspects of the various blood chemistry findings.